

NOT TO BE TAKEN AWAY

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MODERN METHODS OF INFANT FEEDING.*

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A STUDY of the Registrar-General's returns for the forty years which ended in 1900 shows that although the death-rate at all ages had fallen about 15 per cent., no such corresponding reduction could be recorded in the proportion of children's deaths under one year of age. Since the beginning of this century the rate of infantile mortality has shown an appreciable decline, and this we may assume is partly due to the increased interest the subject of the waste of infant life has received, and partly to the fact that recent seasons have been extremely favourable to the preservation of infant life. In 1899, the finest summer we have had for many years, the mortality reached 166 per 1000, the highest recorded during the past fifty years, whereas in 1907, in which the summer was cool and showery, it fell to 118. The great proportion of these deaths occur in infants artificially fed; in Liverpool the deaths from zymotic diarrhœa alone are fifteen times as great in the artificially fed as in the breast-fed infants under three months of age. It is therefore

* A paper read before the Liverpool Medical Institution, December the 2nd, 1909.

obvious that maternal nursing is one of the principal factors upon which we must rely in preventing this appalling mortality, and at the outset of this paper I feel I cannot too strongly emphasise the responsibility we incur when we undertake to direct the feeding of an infant during those months in which it ought by right to be nourished by its mother, and the still greater responsibility we incur when we advise the premature weaning of an infant, anyway until we have exhausted every means in our power to overcome the disturbance, be it in the mother or in the child, which is responsible for the malnutrition. Continued and persistent loss in weight, in spite of our utmost endeavours to rectify the fault, is the only condition under which the substitution of artificial feeding for maternal nursing is justifiable, except, of course, in those exceptional cases in which the health of the mother makes it compulsory.

Even with the greatest care artificial feeding can rarely be accomplished from the time of birth without more or less severe disturbance, and to be successful the method we adopt must so far imitate breast feeding that the various constituents of the food can not only be digested by the infant, but also without throwing too great a strain upon its assimilative capacity. Biological chemistry has not as yet sufficiently advanced to make it a safe guide by itself, but the bio-chemist has taught us once and for all that cow's milk, however scientifically and carefully prepared, can never be so modified as to be equal in chemical and nourishing properties to that of the mother. An important essential to successful feeding is a thorough knowledge and understanding of the differences, both qualitative and quantitative, which exist between the constituents of human and cow's milk. I shall therefore in the first place endeavour to describe these differences (as far as they are at present understood), and afterwards I shall describe the methods of feeding which I have adopted during the last few years, more especially in those cases where, owing to constitutional debility or previous improper methods, the digestive capacity of the infant has been so damaged as to make feeding by ordinary dilution an impossibility. A uniform method adapted to all cases does not exist, and it is only by the most careful consideration of the digestive capacity of each individual case that a suitable method can be arrived at.

Cow's milk of fair average quality contains 4·00 per cent. fat, 4·75 per cent. of sugar, 3·50 per cent. of proteins, and 0·70 per cent. of mineral salts, whereas human milk contains 4·00 per cent. of fat, 7·00 per cent. of sugar, 1·50 per cent. of proteins, and 0·20 per cent. of minerals. It is therefore obvious that whilst the fat content is

about equal in both, cow's milk contains considerably less sugar and two and a half times the amount of proteins as does human milk. The greater part of the fat in both is neutral, and consists of palmatin, stearin, and olein, but even these are in markedly different proportions. Furthermore, cow's milk contains a considerably larger proportion of the volatile glycerides composed of butyric, caproic, and other fatty acids, and it is interesting to note that Pipping* in 1891 could not detect butyric acid in healthy breast-fed children, whereas in children fed on cow's milk fatty acids were discovered in every instance.

The sugar in both milks is identical and is lactose in solution, but the differences in quantity are considerable; when possible it is advisable to use lactose in preference to cane-sugar in milk mixtures, as it is less liable to butyric fermentation.

The proteins in cow's milk are not only considerably more abundant but they also have marked differences in composition. They may be divided into the insoluble casein of milk curd and the soluble proteids, lactalbumin and lacto-globulin, which are still present in whey after the casein has been removed by coagulation with rennet. In woman's milk the soluble proteins are in excess of the insoluble casein in the proportion of 5 to 4, whereas in cow's milk the insoluble proteins are in excess in the proportion of 3 to 1. The caseinogen of cow's milk is easily coagulated by rennet and acids with the formation of a tough firm curd which is dissolved slowly by the digestive juices; the casein of woman's milk is not easily coagulated by rennet and only slightly by acids, and the curd formed is in loose small flakes and readily digested. Another and important difference is the power possessed by cow casein for taking up hydrochloric acid. Heubner has demonstrated that in breast-fed infants free HCl is found in the stomach in about an hour after a meal, but if cow's milk is used free HCl cannot be detected for two hours or longer. This shows the necessity of prolonging the feeding intervals in the artificially fed as compared with the breast-fed infant, otherwise the valuable antiseptic properties of the HCl are lost and fermentative changes in the food bound to occur.

The inorganic salts in cow's milk are three times as abundant as in woman's milk, and contain a relatively larger amount of calcium phosphate and a smaller amount of potassium salts; not only are these quantitative differences present, but more important still, the way in which they are combined with the proteins is very different in the two milks.

* 'Thesis,' Helsingfors, 1891.

Milk also contains a number of ferments or enzymes which are of great importance in nutrition, but their exact nature is not yet fully understood, nor has it been ascertained whether they are carried by the milk as a cell product or as a transudate. In addition to lipase, which splits up neutral fats into fatty acids and glycerine, they consist of amylotic, glycolytic, oxidising ferments and others. In a paper last year Professor Benjamin Moore suggested the importance of oxidase in the prevention of infantile scurvy. Since his paper I have only had one typical case, which made a good recovery upon oxidase kindly supplied by him, the infant throughout treatment being fed entirely on sterilised milk.

Lastly, cow's milk always contains a large number of bacteria whilst human milk is sterile; the number of organisms depends upon the age of the milk, the temperature at which it is kept, and the cleanliness adopted in milking and in storage, but these matters were so exhaustively brought before your notice by the sub-committee which reported upon this important subject a year ago that I need not dwell further upon them beyond emphasising the importance of cleanliness in every detail and also of rapidly cooling the milk as soon as drawn to 50° F. in order to inhibit the growth of the organisms.

One of the most important requirements of a substitute food is that it should be as free as possible from these organisms; milk as delivered at our houses may contain according to the season of the year anything from 40,000 to 20,000,000 organisms per c.c. It is obvious that milk of this description is not fit for an infant's food, and heat is the usual method adopted for destroying the organisms. Some years ago it was considered necessary to heat it to 212° F. for an hour and a half, but it was soon found that the changes induced by this prolonged sterilisation were of such a nature as to seriously interfere with its nourishing properties; the change in taste, the constipation induced, and the occurrence of scurvy in a large number of babies fed with milk so treated led to a considerable modification in the process, and it is now found that by Pasteurisation, that is, subjecting the milk to a temperature of 155° F. for twenty minutes, all pathogenic organisms, including the tubercle bacillus and from 98 to 99 per cent. of the other organisms, are destroyed, whilst the taste and nutritional properties of the milk are little if at all impaired. The apparatus I use for this purpose is that devised by Freeman, and consists of a kettle into which fits a frame of ten cylindrical metal bottle-holders.* Sufficient water is placed in each of the holders to surround the feeding tubes, each

tube containing the quantity of milk for one feed. The kettle is filled with water to a level marked by a rim and boiled; it is then removed from the fire and placed on a wooden table or other good non-conductor of heat, and the frame with the bottle is placed inside, the whole being covered with a lid and allowed to stand for thirty minutes. The volumes of milk and water have been so calculated that in ten minutes they are both at 155°F. , and the water contains heat enough to maintain this temperature for twenty minutes.

To reduce the amount of protein in cow's milk either water, lime-water or barley-water are usually employed, and during the past two years some interesting investigations have been made by T. Wood Clarke* at the Rockefeller Institute upon the effects of these milk modifiers on the gastric digestion of infants. His conclusions, briefly summarised, are: (1) The motility of the infant's stomach varies inversely with the concentration of the food—the more dilute the food the more frequently may the feeds be given. (2) Lime-water does not reduce the acidity of the gastric content; a portion of the acid is neutralised, but this is overcome by an increased stimulation of HCl by the gastric glands. This may even increase the amount of acid available for digestion. (3) Sodium citrate acts on the acid of the stomach, converting it into sodium chloride, and thus markedly reduces the available HCl. (4) Barley-water seems to have no constant effect upon the chemistry of gastric digestion in the infant.

If you compare the composition of cow's milk with that of human milk you find that in order to reduce the proteins to their proper proportion you have to dilute it with an equal part of water, but by so doing you reduce the fat and the carbohydrate in an equal proportion, the mixture in percentages reading fat 2.00, carbohydrate 2.25, and protein 1.75. In order to bring the fat and sugar to the necessary standard all that is necessary is to add to every 12 oz. of the mixture $\frac{1}{2}$ oz. of centrifugal cream and $\frac{1}{2}$ oz. of lactose, when you will have a mixture containing 3.9 per cent. of fat, 7 per cent. of sugar, and 1.75 per cent. of protein. I strongly emphasise the importance of using centrifugal cream, firstly, because it has a fairly constant fat content of 45 per cent., and secondly, if separated as soon as drawn it is comparatively free from organisms. Gravity cream, on the other hand, may be of any strength from 8 to 16 per cent. of fat, and has been shown to contain about 200 times as many organisms as ordinary milk; its use, therefore, unless carefully

* 'Amer. Journ. of Med. Sciences,' June, 1909.

sterilised, is certain sooner or later to be followed by gastro-intestinal disturbance. For this reason I never advise the addition of cream in the out-patient department, and as a matter of practice we have found that by gradually diminishing the dilution of the milk the infants are able to digest a much stronger protein mixture than was formerly believed to be possible. No strict rule can be laid down as to the daily quantity which should be given, but for premature and weakly infants about one fifth of the body-weight, and for healthy infants about one seventh of the body-weight is the necessary allowance. The gastric capacity of the infant should also be borne in mind; at birth the stomach can retain 1 oz., at two weeks 2 oz., at three months $4\frac{1}{2}$ oz., at six months 6 oz., and at 12 months 9 oz.

By feeding on these lines we rarely find the infants suffer from fat injuries, which are not unfrequent when cream mixtures are employed, and if there is difficulty with the proteins one or two grains of citrate of soda added to each ounce of milk will usually correct the difficulty. Sir Almroth Wright,* in 1893, first pointed out that the addition of sodium citrate considerably lessens the curdling from the rennin ferment, and, since Poynton's† paper in 1904, this method of treating protein difficulties has been much employed; whatever be its precise chemical action, there can be no doubt that in a large number of cases the digestion of proteins is greatly facilitated by its use.

The majority of infants fed in this manner do well, and the more difficult cases, when possible, I take into hospital and feed by the methods which I particularly wish to bring to your notice by this paper.

The efforts to place the food constituents in their proper ratio has led to what is known as "percentage feeding," and it is to the teaching of Rotch, of Harvard University, that we owe this very decided advance in our methods; to him also we are indebted for the establishment of the Walker Gordon Laboratories, where the food is made up by experienced chemists, who mix the quantities of centrifugal cream, fat-free milk, lactose, and water necessary to make the desired percentages; the mixture may be pasteurised or peptonised if desired, and is delivered in sealed feeding-tubes packed in an ice-box and ready for use. The milk used comes from the company's own farm, where the necessary precautions for supplying a pure milk are carried out in a most perfect manner.

* 'Lancet,' July the 22nd, 1893.

† *Ibid.*, August the 13th, 1904.

The advantages of employing a milk laboratory are enhanced by the fact that, not only can you order the fat and carbohydrate in the percentage suitable to the individual case, but the proteins can also be split up into caseinogen and whey proteins and given in the exact proportion in which they are present in human milk, or in any other percentage that may be desired.

As a good example of feeding by this method, I will briefly relate the case of B. B—, aged 3 months, whom I saw with Dr. Cuthbert Matthews last July. She was prematurely born and breast-fed for only a few days, when, owing to the failure of lactation, artificial feeding became necessary. Various modifications of milk, water, and cream were successively tried, but were all accompanied by vomiting, discomfort, the passage of unhealthy curdy motions, and loss of weight. An examination of the stools by Dr. O. T. Williams showed the presence of undigested protein, fatty acid crystals and soaps in excess with butyric fermentation, so we decided to commence with a Walker-Gordon mixture containing low percentages of all the constituents, and accordingly ordered one containing fat 2 per cent., sugar 4 per cent., caseinogen .50 per cent., and whey proteids .50 per cent., to be peptonised for fifteen minutes, and seven feeds of four ounces to be given in the twenty-four hours. Improvement in the symptoms was at once noted; the vomiting became less frequent and the stools more healthy, but, owing to the low percentage of fat and sugar, she did not gain in weight, although she ceased to lose. The fat, sugar, and whey proteins were therefore slowly increased, so that by July the 30th she was digesting fat 2.50 per cent., sugar 5 per cent., caseinogen .50 per cent., and whey protein .75 per cent., and had gained 9 oz. A month later she could assimilate 3 per cent. of fat, .50 per cent. of caseinogen, and 1 per cent. of whey protein, and had gained 2 lb. 10 oz.; and by October the 15th her weight had further increased by 2 lb., making a total increase of 4 lb. 10 oz. in exactly three months.

Another case which shows the value of this method, but in which the prognosis was hopeless, was that of baby T—, aged 5 months, whom I saw with Dr. Wright, of Chester, last June. She was healthy born, but bottle-fed on milk, cream, and water, and for nine weeks had been suffering from colic, vomiting, and large pultaceous, pale, offensive stools, with rapid loss in weight. The abdomen was so distended that chloroform had to be administered before a satisfactory examination could be made, when a large mass of tuberculous glands was felt to the right of the umbilicus. She was put on a

Walker Gordon mixture, containing fat 1 per cent., sugar 6 per cent., caseinogen .25 per cent., and whey protein .75 per cent., and the mixture was ordered to be pasteurised for twenty minutes at 155° F. The result was most gratifying, as the discomfort almost entirely disappeared, the vomiting ceased, and the character of the stools improved, and the increased comfort was maintained until her death some six weeks later. This case forcibly illustrates, not only the great relief to the gastric symptoms afforded by the method adopted, but further emphasises the importance of taking every precaution to eliminate the tubercle bacillus from the milk used for an infant's food; the closest investigation failed to trace any other possible source of infection other than the milk or cream, and this, unfortunately, is only one of many hundreds of infants who are annually sacrificed in this manner.

Milk supplied in this way must necessarily be somewhat costly, but thanks to the investigations of Holt and the chemists of the Walker Gordon Laboratories, we are now able by the use of so-called "top milk" to prepare at home percentage modifications which are sufficiently accurate for all practical purposes, and for their success all that is necessary is a pure fresh milk, an approximate knowledge of its composition, and clear and explicit directions in writing for the mother or nurse.

In applying this method at the Children's Infirmary I employ the three primary formulas suggested by Holt,* and they are:

- (1) Those in which the fat is to the proteins in the proportion of 3 to 1.
- (2) Those in which the fat is to the proteins in the proportion of 2 to 1.
- (3) Those in which the fat is to the protein in the proportion of 8 to 7, or about equal.

With these three formulas variations to suit the feeding in any particular case can easily be made; the first two series will be found most useful in young and delicate infants and in cases where the difficulty is with the proteins, whereas formula 3 is more suitable for older and more robust infants, or for those to whom it is desirable to give a low fat percentage.

The first series of formulas in which the fat is three times the protein, can be best obtained by drawing off the upper 11 oz. of a quart of "bottle milk" which has been standing for four hours; repeated examinations have shown this to consist of fat 10 per cent., sugar 4.3 per cent., and protein 3.3 per cent. To simplify calcula-

* 'Diseases of Infancy and Childhood,' 4th edit., p. 194.

tion a 20-oz. mixture must be made at one time, the number of ounces of top milk being added to the number of ounces of water required to make the mixture up to that amount. The percentage of any mixture made from this formula may be readily calculated by remembering that the percentage of fat is exactly one half the number of ounces of top milk used in the 20-oz. mixture and the percentage of protein is one third that of the fat. For example, suppose we use 6 oz. of 10 per cent. top milk in water to 20 oz. the percentage of fat will be one half the number of ounces used, or 3, and the percentage of proteins will be one third of this, or 1. One ounce of lime-water is usually added to the mixture, and in order to bring the percentage of sugar up to the required standard 1 oz. of lactose is also added. The prescription when complete will therefore read:

10 per cent. top milk	3vj
Lactose	3j
Lime-water	3j
Water ad.	3 xx

which in percentages is equal to fat 3 per cent., sugar 6 per cent., proteins 1 per cent., and alkalinity 5 per cent. Suppose we wish to give seven feeds of 4 oz. each in the twenty-four hours, we fill each feeding-tube with 4 oz. of the mixture, pasteurise for twenty minutes, and all that is then necessary is to warm each tube when required for feeding; we thus at one time prepare all the food required for twenty-four hours.

The second series of formulas, or those in which the fats are twice the proteins, are obtained by drawing off the upper 16 oz. of a quart of "bottle milk" which has stood for four hours. Such a top milk contains of fat 7 per cent., sugar 4.4 per cent., and proteins 3.5 per cent., and from this the second series of mixtures are obtained by dilution in a manner exactly similar to the first. The percentages in these formulas may be calculated by remembering that the percentage of fat is one third the number of ounces of top milk used in the 20-oz. mixture and the percentage of proteins will be one half that of the fat.

For the third series of formulas, in which the fat and proteins are about equal, we use whole milk or fat 4 per cent., sugar 4.5 per cent., and proteins 3.5 per cent. To calculate the percentage of fat in a 20-oz. mixture we remember that the fat is four twentieths or one fifth the number of ounces of milk used. The percentage of any constituent in a mixture may be worked out by multiplying its percentage in the original milk, top milk, or cream

by the number of ounces of each in the food and dividing by the number of ounces prepared. For example, supposing we are using 15 oz. of whole milk and 1 oz. of centrifugal cream in a 30 oz. mixture, to find the percentage of fat we multiply 4, its percentage in milk, by 15, which equals 60; we then multiply 45, the percentage of fat in the cream, by 1, which equals 45; these added together equal 105, and divided by 30, the number of ounces in the mixture, we get 3·5, which is the percentage of fat. Similarly, to find the protein we multiply 3·5 by 15, which equals 52·5, and then divide by 30, which gives 1·7, the percentage of protein.

Some difficulty may arise in determining with what percentages we should commence feeding, and as a general rule it is best to begin with them all low and gradually increase every few days the fat at the rate of ·25 per cent. and the proteins by about one half of this, always being guided by the weight-curve and the character of the stools. The infants upon whom I have applied these methods have all been suffering from considerable malnutrition the result of digestive disturbance, and I therefore have usually commenced with weak mixtures made from either formula 1 or 2. Thus, John C—, aged 6 weeks, was healthy born and breast-fed for only a week; he was then put on a feed consisting of two parts of milk to one of water—much too strong for an infant only a week old—and consequently diarrhœa set in with five to six green, offensive stools daily. This condition continued until admission, five weeks later, when he weighed only 6 lb. 2 oz., the normal weight for a child of that age being 10 lb. 4 oz. For eighteen hours he was given 5 per cent. lactose solution, at the end of which time he was put on a mixture containing 4 oz. of 10 per cent top milk, with 1 oz. of lactose and 1 oz. of lime-water, and of this he was given 2 oz. every three hours. On September the 13th, a week after admission, he had gained 8 oz., the diarrhœa had ceased, and the motions contained only a slight curd. The mixture was increased by 1 oz., and now read, fat 2·5 per cent. and protein ·80 per cent. By the 20th he had gained another 8 oz. and weighed 7 lb. 2 oz., and the stools were homogeneous and healthy.

The food was now changed to 7 per cent. top milk, of which he was given 6 oz. in the 20-oz. mixture, and which equalled fat 2·1 per cent and protein 1·05 per cent., 3 oz. being given every three hours, and by October the 4th he weighed 8 lb. The rapid advance in weight, the improvement in the infant's condition, and the desire of his mother to have him home now tempted me to try a weak whole-milk mixture, which proved a great mistake, for although for

the first few days he continued to increase in weight, diarrhœa again set in, and during the following week his weight fell to 6 lb. 14 oz. On October the 19th 7 per cent. top milk was again tried, 7 oz. in the 20-oz. mixture being given with the happiest results, for the diarrhœa was at once arrested, and after a few days the weight commenced again to rise, so that by October the 30th he weighed 7 lb. 4 oz.; the stools, two daily, were homogeneous and yellow, and he was taking 3-oz. feeds containing fat 2 per cent., sugar 6 per cent., and protein 1 per cent. in a most satisfactory manner. From this time onward his progress was uninterrupted, and by November the 30th he weighed 8 lb. 14 oz.

Another case of equal interest is that of Mona T—, who was sent to me by Dr. Agnew with a history of having been healthy born and breast fed for six weeks; she then began to vomit, and owing to the persistence of this symptom and the gradual but progressive loss in weight she was taken off the breast and given a mixture of 1 part milk to 2 of water with half a teaspoonful of cream in every alternate feed. As the vomiting continued barley-water was tried instead of water but was equally unsuccessful, and finally Allenbury's food No. 1, but the infant continued to vomit and to lose weight. On October the 12th she was poorly nourished, anæmic, and weighed 8 lb. 7 oz.; the bowels were moved once a day, but were pale, offensive and curdy. She was put on a mixture containing 6 oz. of 7 per cent. top milk or 2 per cent. fat, 6 per cent. sugar, and 1 per cent. protein, 4 oz. being given every three hours. As she digested this well and there was no vomiting the strength of the mixture was increased every alternate day by .25 per cent. of fat, so that on October the 19th she was taking fat 3 per cent., sugar 7 per cent., and protein 1.50 per cent., and had gained 9 oz. On October the 24th, when she weighed 9 lb. 8 oz., the quantity of each feed was increased by two teaspoonfuls, and on October the 1st, when she had further gained another 6 oz. and weighed 9 lb. 14 oz., the amount of each feed was again increased by two teaspoonfuls. The infant had now a healthy appearance and the stools were yellow, well digested and healthy-looking, and her general progress was uninterrupted until her discharge from hospital, her weight being 11 lb. 12 oz. Here, then, are two cases both of which were rapidly drifting into hopeless malnutrition, the one owing to improper methods of feeding, the other in which the food was skilfully directed but totally failed owing to the weakened assimilative capacity of the infant, yet both responded to the percentage system in a manner which surpassed my most sanguine

expectations. For the successful conduct of these cases regular weighing of the infant and routine inspection of the napkins are most necessary, and it is especially important to determine whether the masses of curd so frequently seen are due to undigested proteins or to fat and fat compounds; these can be distinguished by their colour, their microscopic appearance and their chemical reactions. Casein curds in the stools are usually accompanied by flatulency and colic and are due to too high proteins; this can be rectified without interfering with the fat by changing to a formula in which the protein proportion is lower, for example, from a 7 per cent. top milk in which the proteins are one half the fat to a 10 per cent. top milk in which they are one third. Loose, green, offensive stools of an acid odour are due to too high fat or too high sugar, and large, white, dry stools are nearly always due to too high fat. Vomiting soon after a meal can usually be checked by reducing the quantity and increasing the interval between the feeds, but vomiting of sour curd one to two hours after the meal is usually indicative of too high fat, and can be rectified by reducing the fat content by using a 7 per cent. in place of a 10 per cent. top milk or preparing mixtures from whole milk.

These, then, are the methods of substitute feeding which I have of recent years adopted—methods which I fear I have very inadequately laid before you, and not with that lucidity their importance deserves. I do not claim for them that precision which a milk laboratory affords, but I can with confidence affirm that, after many years' experience in various methods of feeding, they are far and away in advance of any I have hitherto adopted, and if others will only give them a trial I feel assured that they, too, will be gratified at the results they will obtain, and will have the satisfaction of knowing that they are in some small measure assisting in diminishing the enormous infant mortality which is at the present time a blot upon every civilised country.

In conclusion I would tender my thanks to Dr. O. T. Williams, not only for helpful guidance by examination, of the fæces in many of my cases, but for much other useful information, and also to the sisters and nurses of my ward, without whose skilful and zealous co-operation no system of feeding, however scientifically devised, could be carried to a successful issue.

NEURO-FIBROMATOSIS OF THE TONGUE IN A CHILD,
TOGETHER WITH A NOTE ON THE CLASSIFICATION
OF INCOMPLETE AND ANOMALOUS CASES OF
RECKLINGHAUSEN'S DISEASE.

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THE patient, J. D—, a rather delicate-looking boy, aged 6 years when brought to the hospital, had a hard swelling below the tongue, which, according to the mother, had been almost certainly observed when the child was ten months old. The tumour in question (April, 1909) formed an oval projection (about 5 and 10 mm. in breadth

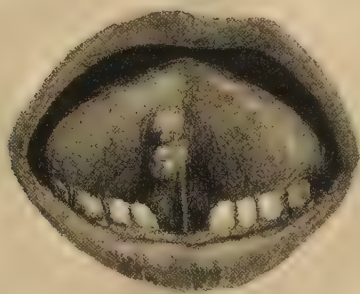


FIG. 1.—To show the position of the tumour under the tongue.

and length respectively) on the under surface of the tongue, situated along the right side of, and parallel to, the frænum linguæ, about half way between the tip of the tongue and the orifices of Wharton's ducts (see Fig. 1). The surface of the projecting tumour, which was apparently covered by healthy mucous membrane, was partly whitish and partly reddish in colour. No evidence of disease in the thoracic or abdominal viscera could be detected, and the general health of the boy appeared satisfactory in spite of his somewhat delicate appearance.

The projecting portion of the tumour was kindly removed for me by Dr. Pfister; and Dr. J. C. G. Ledingham, to whom I am much indebted, kindly examined it microscopically. Sections (see Fig. 2)

showed bundles of medullated nerve-fibres bound together by a close connective-tissue stroma. The tumour was evidently neuro-fibromatous, and a hard cord still remains to the right of the boy's frænum linguæ, doubtless representing part of the lingual branch of the fifth cranial nerve.

I regard the tumour as a mild form of plexiform neuroma involving one side of the tongue; in fact, I believe the condition to be a lesser degree of the "macroglossia (or rather hemi-macroglossia) neuro-fibromatosa" described by Abbott and Shattock in 1903,* and by Spencer and Shattock in 1907.† The case is, therefore, according

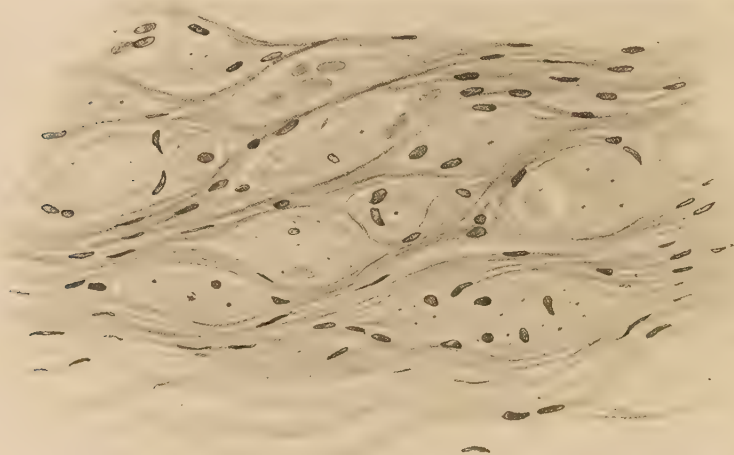


FIG. 2.—Microscopic section of a portion of the tumour, showing medullated nerve-fibres.

to my classification, likewise to be considered as an (at least as yet) incomplete form of Recklinghausen's disease, and in this connection it is interesting to note that there is a somewhat irregularly shaped *café au lait* patch of cutaneous pigmentation, occupying an area of three or four square inches, on the upper part of the front of the boy's left thigh. The mother thinks this patch of pigmentation was present from birth, in which case it might be termed "a superficial pigment-nævus." There is no abnormal pigmentation elsewhere on the body or limbs, nor are any neuro-fibromata detected except in the tongue. In this connection it may also be mentioned that a

* Abbott and Shattock, 'Trans. Path. Soc., Lond.,' 1903, vol. liv, p. 231.

† Spencer and Shattock, 'Proc. Roy. Soc. Med.,' Pathological Section, 1908, vol. i, p. 8.

sister (aged $10\frac{1}{2}$ years) of the patient has a small, flaccid ("empty"), molluscous-like tumour on the body (on the lower part of the sacral region to the left of the middle line), which is supposed to have been present at birth. She has no other tumours and no abnormal cutaneous pigmentation.

Though, strictly speaking, the term "Recklinghausen's disease" should be reserved for cases showing (1) obvious neuro-fibromata in connection with nerve-trunks, (2) molluscous tumours (*mollusca fibrosa*) of the skin, and (3) cutaneous pigmentation, yet incomplete forms occur in which one or even two of this triad of morbid features may be wanting. I would classify the anomalous or incomplete forms of Recklinghausen's disease as follows:

(1) Cases of plexiform neuroma and "elephantiasis nervorum" unaccompanied by multiple molluscous tumours of the skin, with or without cutaneous pigmentation. The least uncommon situations for these tumours are, perhaps, on the face and head. Into this group fall cases like the present one, and those of "macroglossia neuro-fibromatosa," already referred to.

(2) Cases of multiple molluscous tumours of the skin unaccompanied by any obvious neuro-fibromatosis of nerve-trunks, with or without decided cutaneous pigmentation.

(3) Cases of pigmentation of the skin not (or at least not as yet) accompanied by obvious neuro-fibromata of nerve-trunks or cutaneous neuro-fibromata (molluscous tumours). This class includes clinically all cases of cutaneous pigmentation of a kind similar to that met with in Recklinghausen's disease before the development of obvious neuro-fibromata,* though in such cases there may be neuro-fibromata present which cannot yet be detected by clinical examination. This class was not specially recognised, or given a special place, in Alexis Thomson's classical monograph, 'On Neuroma and Neuro-fibromatosis,' published at Edinburgh in 1900.

(4) Anomalous cases of neuro-fibromatosis, complicated by the co-existence of bony or epidermic (papillomatous) changes. Benaky† described an example of this class under the heading, "General Neuro-fibromatosis, with Molluscum Pendulum of the Right Side of the Face." In his case there were deformities of the cranium, vertebræ, and tibia. In February, 1906, Mr. Ludford Cooper brought forward a case at the Ophthalmological Society, which he described as "neuromatous elephantiasis," in a girl, aged 11 years. In Cooper's

* Cf. F. P. Weber, "Cutaneous Pigmentation as an Incomplete Form of Recklinghausen's Disease," *Brit. Journ. Derm.*, London, 1909, vol xxi, p. 49.

† *Ann. de Derm. et de Syph.*, Paris, November, 1904, p. 977.

case the outer and lower portions of the frontal bone and the squamous portion of the temporal bone were much more prominent on the affected than on the other side. In 1901 Sir Jonathan Hutchinson* described and figured the case of a woman with multiple molluscous tumours of the skin, whose right cheek was bulged by bony overgrowth; the right frontal bone was likewise thickened, and the right eye was pushed forward as if by bony growth behind it. At the Society for the Study of Disease in Children, in April, 1907, Dr. Fletcher Beach† showed a case described as one of Recklinghausen's disease, in a boy, aged 5 years and 10 months, who apparently also had bony thickening in the right temporal region. The most extreme example of this class was doubtless the famous "elephant man," whom many must have seen when he was at the London Hospital. Sir Frederick Treves,‡ in his description of this "elephant man," mentioned that the deformities of the osseous system were limited to the skull, right upper-extremity, and feet. "The proportions of the head were enormously increased, and its general outline was that of a hydrocephalic skull." There was exuberant papillomatous growth of some parts of his skin.

CARIOUS TEETH IN ELEMENTARY SCHOOL CHILDREN.

By F. E. LARKINS, M.D., D.P.H.

IN the daily examination of school children the most common defect seen is decayed teeth. In my district the following percentages show the actual amount found for the four different age-periods examined :

Aged 13	.	.	.	.	.	64 per cent.
„ 10	.	.	.	.	.	77 „
„ 7	.	.	.	.	.	82 „
„ 5	.	.	.	.	.	80 „

These figures under-state the actual amount of caries, because we use no probe and mirror, so that it is highly probable that some 10 per cent. of cases are overlooked.

I was so impressed by this astounding state of the mouths that

* 'Polyclinic,' London, July, 1901, p. 12.

† 'Reports of the Society for the Study of Disease in Children,' London, 1907, vol. vii, p. 167.

‡ 'Trans. Path. Soc., Lond.,' 1885, vol. xxxvi, p. 494.

I naturally asked myself the question, Does it really have any bad effect on the general health of the children?

The most ready means of getting an answer that I could think of was by studying the weights of the children in relation to their teeth. This I have done with 1000 consecutive children, aged 5 years. I limited myself to five-year-old children, because at that age there have been fewer opportunities for other causes to have affected the general health than later. Only the temporary teeth, therefore, come into consideration in this paper, but if it is shown that they have an injurious effect, I take it that it follows that carious permanent teeth will have a similar effect.

First of all I classified the children in three groups, according as to whether their teeth were good, medium, or bad. "Good" I called those with clean teeth and no apparent decay; "bad" were those with several badly decayed teeth, with rotten stumps or with pus. The result was as follows:

Those classified as "good"	.	.	averaged 41.54 lb.
"	"	" "medium"	" 39.18 "
"	"	" "bad"	" 38.85 "

Or, in other words, the bad ones averaged 2.69 lb. less than the good ones, which is equivalent to a loss of six months—a very serious handicap at that age.

This method has the fault that no two people would be likely to judge the mouths alike, so to get rid of the personal element I tried another way, *i. e.* that of classifying the children according to the number of carious teeth present. In this method, then, is a point that should not be overlooked, *i. e.* that the older a child is the more decayed teeth is it likely to have, so that the more decayed teeth that are found the heavier the child should be if caries has no retarding effect.

Comparisons should be made with those children of exactly the same age to a month, but this I was unable to do. I have divided them up into equal heights, but this, again, is quite against proving the point, because, for example, consider two children 42 in. high: one is exactly five and tall for its age, possibly with no caries; it is certain to weigh less than another just under six, short for its age, but sure to have some decayed teeth. However, if this is borne in mind the results shown in the table are all the more convincing. As it is those with no caries are seen to average more than the rest in every column except the 45 in. one, but in this the numbers were so small as not to be of much account.

Thus it seems clear to me that the more caries there is in a child's mouth the more is its general health and development retarded.

Table showing Average Weights on Numerical Classification.

Height.	No decayed teeth.	1-4.	5-8.	9-12.	13 and over.
37 in. and under	33·7	32·4	31·86	30·00	—
38 „	34·85	34·53	34·7	34·6	33·5
39 „	36·26	36·00	35·5	35·66	37·5
40 „	37·51	37·33	34·5	36·57	36·5
41 „	39·95	39·07	38·75	38·26	40·00
42 „	41·85	40·87	41·48	40·92	39·75
43 „	44·21	42·83	42·15	43·40	39·66
44 „	46·64	44·42	44·05	43·80	—
45 „	46·00	46·5	47·14	46·75	—
46 „ and over	—	47·50	47·00	42·5	48·5

If this is so does it not also follow that its resistance to the infections will be lessened? I think it does, and in support of this I find that in a number of children aged 5 years whose records I have looked up, those who have had measles (to take the most common of the infections as an example) had sound teeth in only 20·9 per cent., whereas in those that had not had measles the teeth were sound in 43·9 per cent. It may be argued that the measles caused the decay, but I think that in most cases the interval between the attack of measles and the examination of the child was too short to admit of this explanation.

Now, admitting the general prevalence of this scourge and its deleterious effects, one wants to know how to stop it, and, consequently, what are its causes. No doubt the dentists can tell us fully, but one cannot help being struck by two things: (1) The higher the social scale the worse the teeth are; and (2) the teeth are worse in bottle-fed babies.

To a certain extent these two facts coincide, but I think the explanation of the first lies in the fact that the child is kept too long on slops and baby fodder instead of being given something to use its teeth on earlier. I do not see why a properly bottle-fed baby should fare worse than a breast-fed one; the presumption is that they usually are not properly fed. I find that the bottle-fed baby has not only more often got caries than its breast-fed neighbour, but when caries is present in both it occurs to a greater extent in the bottle-fed one. I therefore consider that next to due attention to the pregnant mother, great importance lies in the gospel of breast feeding and of giving the teeth something to exercise their proper function on early.

Provincial Societies.**LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.**

December the 17th, 1909.

A Case of Adhesive Mediastinitis.—Dr. A. G. BARRS showed a boy, aged 9 years. Admitted September the 20th, with signs of fluid at the left apex and pericarditis. Pneumococcus obtained in pure culture from fluid taken from chest. Pericardial rub persisted for some weeks. Present condition: Marked cyanosis with, at times, dyspnoea and cough; signs of cardiac enlargement, with dulness in left chest and at right base; hepatic enlargement, ascites and some oedema of the legs. Abdomen has been tapped.

A Case of Cerebral Tumour.—Dr. T. CHURTON showed a girl, aged 10 years. History of a fit in July, 1908, and a fall. A second fit in September, 1909. Previous to admission on October the 20th headache, vomiting, failing sight, affection of speech, gait, and sphincters. At the same time patient began to put on weight rapidly. Patient's condition: Patient unable to sit up by herself. Some inco-ordination of arms. Ankle clonus. Affection of sphincters. Marked optic neuritis. Mental condition much brighter, though headache is still present. Still gaining weight rapidly.

A Case of Birth Palsy, showing almost Complete Recovery.—Dr. E. F. TREVELYAN showed a girl, aged 5 months. Instruments at birth. Left arm noticed to be paralysed after birth. Present condition: Nearly all movements are now visible in the arm except external rotation. Improving.

A Case of Tuberculous Laryngitis in a Child; Tracheotomy.—Dr. E. F. TREVELYAN showed a girl, aged 9 years. There is well-marked infiltration of epiglottitis. Rest of larynx not easily seen. There was marked stridor before tracheotomy was done. No evidence of syphilis. Now well-marked signs in chest.

Cases of Dermoid Tumour of Cornea.—Mr. MICHAEL TEALE showed (1) a boy, aged 11 years. Left eye shows a flat, circular tumour lying across the corneal margin, with dry epidermoid surface. Present since birth. Not increasing in size. Produces no discomfort. No other congenital anomaly found. (2) A girl, aged 4 years. Tumour lying across corneal margin. Noticed since birth. Thought to be enlarging.

A Case of Congenital Syphilitic Arthritis.—Dr. MAXWELL TELLING showed a boy, aged 15 years. When first seen October the 4th, 1909, both knees swollen and containing fluid; had been so for twelve months. Periostitis of both tibiae; more marked in left. Deafness for five months; notching of one upper incisor.

A Case of Hemiplegic Choreiform Movements.—Dr. MAXWELL TELLING showed a man, aged 25 years. Marked involuntary movements of left hand since eleven years old; no definite onset. In 1895 admitted to infirmary, and diagnosed "intra-cranial disease" (then had double optic neuritis).

LIVERPOOL MEDICAL INSTITUTION.

December the 2nd, 1909.

A Case of Congenital Tumour of the Right Foot.—Mr. R. C. DUN showed a male, aged 18 months. The tumour was relatively the same size as at birth. The anterior half of the foot was increased to double the normal size, the enlargement involving both the dorsal and plantar aspects. The growth was soft, non-fluctuating, painless, and attached to the skin in parts. The skin over it was normal in appearance. The toes were not involved, and a X-ray photograph showed no bony changes.

A Case of Congenital Deficiency of Ribs.—Mr. R. C. DUN showed an infant, aged 5 months. In the anterior axillary line on the right side about one inch of the third, fourth, and fifth ribs was absent. The ends of the defective ribs could be distinctly felt. The pleura and lung were ballooned outwards through the gap in the bony wall of the chest when the child cried. The right pectoral muscles and mamma were imperfectly developed. No other congenital defects were present.

A Case of a Large Congenital Lumbo-sacral Tumour Associated with Paralysis of the Lower Extremities.—Mr. R. C. DUN showed a girl, aged 3 years. The tumour was rather larger than a cricket ball, and was covered with normal skin. A dimple was present in the right lower quadrant, in addition to a well-marked post-anal dimple situated immediately below the tumour. On palpation the tumour was found to vary in consistence: the upper portion was solid, and in it a well-marked bony or cartilaginous process could be felt, which was free distally and joined to the left side of the sacrum proximally. The lower part of the tumour contained fluid, but there was no increase in tension when the child cried.

A Case of Complete Extroversion of the Bladder and Epispadias.—Mr. R. C. DUN showed a boy, aged $2\frac{1}{2}$ years, in whom it was proposed to transplant the ureters into the sigmoid flexure.

A Case of Cerebellar Tumour.—Dr. N. PERCY MARSH showed a girl, aged 4 years, with cerebellar tumour with typical signs and symptoms, viz. headache, vomiting, double optic neuritis, paralysis of the left sixth nerve, nystagmus, weakness of conjugate movements, and inco-ordination with typical staggering gait. She had an attack of measles in February, 1909, and the head symptoms commenced in March.

A Case of Diffuse Encephalitis.—Dr. N. PERCY MARSH showed a boy, aged 6 years, with diffuse encephalitis following measles. During convalescence from the attack he suddenly vomited and lost consciousness, and ten days later, when consciousness returned, was found to be speechless and to have lost power in all his muscles. On admission, six weeks later, he was unable to sit up or even hold his head up, and was speechless; there was pronounced ataxia of all the limbs and paralysis of the left sixth nerve; no optic neuritis or paralysis of other cranial nerves. He is slowly improving, speech is returning, but his mental condition is defective. The lesion is extensive, probably involving the mesencephalon and the cerebellum.

A Case of Encephalitis Following a Fall.—Dr. N. PERCY MARSH showed a girl, aged 4 years, with encephalitis following a fall, a week after which she became very irritable and restless and developed marked tremors affecting all the limbs and trunk; she was unable to stand. She is improving, and tremors are now only seen during muscular action or excitement. There is no optic neuritis, no headache, no vomiting. The lesion here is probably in the cerebello-rubio-spinal tract.

A Paper entitled "Modern Methods of Infant Feeding" was read by Dr. PERCY MARSH, who introduced the subject by pointing out the importance of maternal nursing as a factor in reducing the present high mortality amongst infants. He then described in detail the differences, both qualitative and quantitative, which exist between human and cow's milk, the importance of the enzymes in nutrition, and the desirability of avoiding their destruction by the employment of sterilisation; he therefore recommended pasteurisation at 155° F. for the destruction of bacteria in the milk, and described Freeman's apparatus which he used for that purpose. He strongly advocated the percentage method of feeding, especially in those cases of malnutrition in which the assimilative capacity of the infant had been greatly impaired by previous improper methods. The details of percentage feeding were then described: firstly, when employed through the agency of milk laboratories, and secondly, the home methods as advocated by Holt, in which, by the use of "top milks" containing 10 per cent. or 7 per cent. of fat, variations in the fats and proteins to suit the requirements of any particular case could readily be obtained. Cases illustrating the methods employed were described, and also the manner of obtaining the "top milks." In conclusion the author stated his belief that the percentage system of feeding was far and away in advance of any method which he had, in an experience extending over many years, previously adopted.

NORWICH MEDICO-CHIRURGICAL SOCIETY.

November Meeting.

A Case of Persistent Muscular Spasm.—Dr. CLEVELAND showed a case of persistent muscular spasm affecting all the muscles of the body except those of the head and neck. The patient was a boy, aged 1 year and 8 months. He was admitted into the Jenny Lind Children's Hospital in May, 1909, for wasting. His general condition improved under treatment, but the state of the muscles remained unaltered. The family history is unimportant. On admission he showed no marked signs of rickets, had nine teeth, and the fontanelle was nearly closed. Until the age of three months he was a healthy baby, but since then he has always been wasted. Has not suffered from sickness, but has always been constipated. In spite of his wasted appearance the muscles below the neck are easily seen, and stand out much as do those of a trained athlete. Thus the outlines of the biceps, triceps, and the extensors of the forearm can be readily distinguished. The gastrocnemii are equally obvious. When contracted the muscles feel hard, but when, as occasionally happens, the spasm is relaxed for a short time, the muscles are quite soft. The pectoral and abdominal muscles are

similarly affected. In striking contrast are the muscles of the neck. If the child is sat up the head falls backward, giving at first the impression that it is retracted. The face muscles show no abnormality. He is mentally deficient, but apparently has good voluntary movement of his limbs. The hands are generally clenched—he “makes a fist” with the fingers over the thumb. He shows none of the signs of tetany. The electrical excitability of the muscles is not increased. The plantar reflex is flexor, the knee-jerks equal and brisk, and there are no abnormal reflexes. Tactile sensation is good. The discs are normal. The child can be lifted by its limbs in almost any position, as if it had *rigor mortis*; only the head falls back. While under observation the child developed a syphilitic rash. The clinical picture is not at all like that of “Little’s disease,” although the mental deficiency and the distribution of the “spasm” point to the fault being in the cerebral cortex.

Decompression Operation Performed over the Cerebellum.—

Mr. H. A. BALLANCE showed a little girl, aged $5\frac{1}{2}$ years, seven and a half weeks after a decompression operation performed over the cerebellum. The child had been ill for ten weeks prior to operation; headache, vomiting, double optic neuritis, impaired vision, and great wasting were present, and had been gradually increasing in severity. There was no inco-ordination of the limbs, but slight nystagmus and weakness of the right side of the face were observed. The bone over both cerebellar lobes was removed, and the dura mater over the right. There was great excess of cerebro-spinal fluid, and many meningeal adhesions between the right lobe of the cerebellum and the dura lining the occipital fossa. These were broken down, and the cerebellum, which had bulged greatly on opening the dura, resumed its normal position. No tubercles were seen. The child has recovered, with a hernia at the site of operation; the optic neuritis and all the symptoms have quite disappeared.

A Case of Deformity of Lower Limbs.—Mr. J. BURFIELD showed a boy, aged 6 months, born with the following abnormalities: In both legs the fibulae are absent. There are only three toes on each foot; the two corresponding metatarsal bones to the absent toes are suppressed. In the right leg the tibia is curved anteriorly and acutely at the junction of its middle and lower thirds, forming a marked prominence under the skin, and leading to considerable shortening. This curve has been increasing since birth, and is probably due to the tension of the flexor muscles of the calf, and also accounts for the fact that the posterior surface of the os calcis is considerably above the lower articular surface of the tibia. There is marked talipes equinus on this side.

Philadelphia Pediatric Society.

MEETING, December the 14th, 1909, J. CLAXTON GITTINGS, M.D., President.

Hystero-epilepsy Associated with Bothriocephalus Latus Infection.—Dr. HOWARD CHILDS CARPENTER showed a girl, aged 8 years, with hystero-epilepsy, infected with the *Bothriocephalus latus*. The child was born in Ireland, and was probably infected by eating uncooked pike. Links were first seen in the stools when she was three years old. For fifteen months

she has been subject to general epileptiform convulsions, varying from one to fifteen convulsions a month; lately, in addition to these, she has had typical hysterical attacks. On four occasions long pieces of the worm have been passed, but as yet the head has not been obtained. Her blood shows a very moderate anæmia.

Dr. J. P. CROZER GRIFFITH said that although *Bothriocephalus latus* is rare in this country, without doubt more cases occurred than were reported. He had himself seen one in a Swedish woman, several years ago, which he had not published. The patient showed the symptoms of pernicious anæmia, such as the presence of this worm can readily occasion. It is to be noted that in the child exhibited to-night there is no marked anæmia. Dr. Griffith thought that she was suffering from epilepsy, but that with it was combined a distinct element of hysteria.

Extreme Enlargement of Liver and Spleen.—Dr. C. W. SCHAEFFER, by invitation, showed this case, in a girl, aged 11 months. Family history was negative, the family being noted for its longevity. She was never ill until September, 1909, when the mother first noted the enlarged abdomen, which has been increasing in size gradually since then. Examination revealed a spleen extending from the eighth rib above to a scant finger's breadth from the iliac spine and about three fingers' breadth from the symphysis pubis. The liver extends downward to three fingers' breadth from the right iliac spine. Both organs seem firmer than normal, but their surfaces are smooth and no nodules could be detected. There are no other symptoms. She is well nourished, has not lost weight, and digestion is good. Blood examination shows red blood cells, 3,660,000; leucocytes, 13,150; hæmoglobin, 58 per cent.; differential count gave polynuclears 46 per cent.; lymphocytes, 49 per cent.; mononuclears, 1 per cent.; eosinophiles, 1 per cent.; basophiles, 1 per cent.; and transitionals, 2 per cent. The urine shows slight trace of albumin. The von Pirquet test was positive, while the Noguchi test, made from spinal fluid, was positively negative. Dr. Schaeffer made the provisional diagnosis of splenic anæmia, due probably to an undiscovered tuberculous lesion. Syphilis, cirrhosis of liver, leukæmia, and pernicious anæmia were excluded, while the pseudo-leukæmia of von Jaksch and a malignant growth were admitted as possible.

Dr. ALFRED HAND, jun., said that physical examination was always very unsatisfactory in this patient; several conditions were suggested by the child's appearance, the first being tuberculosis, in view of the rigid abdominal walls and the positive von Pirquet reaction; but the tuberculosis may be elsewhere, and the child is not yet greatly emaciated, so that syphilis was next thought of, and Dr. Hand advised the therapeutic test in spite of the negative Noguchi-Wassermann reaction. Other possibilities are general enlargement of liver and spleen secondary to some gastro-intestinal infection, analogous to von Jaksch's pseudo-leukæmic anæmia, and lastly, neoplasm.

Dr. GITTINGS had examined this child under anæsthesia. The liver and spleen were greatly enlarged, firm and regular in outline, with rounded edges, but without any suggestion of new growth. The lower right quadrant of the abdomen was tympanitic, and ascites could not be demonstrated, neither could any masses be palpated. From all the evidence at hand the child had been unusually free from digestive disorders or any other illness, and there were no signs of rachitis. The anæmia is very mild and progresses very slowly. The clinical picture and previous history are, therefore, unlike those usually seen in so-called splenic anæmia or in von Jaksch's anæmia.

In this connection it is interesting to note the cases of idiopathic splenic enlargement reported by Bovaird ('Amer. Journ. Med. Sci.,' 1900), and others previously studied by the French, notably Bouchard; in these the enlargement was due to endothelial proliferation, but the marked coincident enlargement of the liver seen in Dr. Schaeffer's case was lacking. In regard to the question of syphilis, both the negative Noguchi test and the absence of all other corroborative signs are strong evidence against it. Nevertheless he believes, with Dr. Hand, that mercurial treatment should be instituted. Further study of the blood will probably determine the diagnosis.

Congenital Heart Disease.—Dr. CHARLES A. FIFE showed this case, a boy, aged $3\frac{1}{2}$ years, because of the unusual degree of cyanosis, the excessive clubbing of fingers and toes, the peculiar shape of the heart, and the absence of a murmur, which at one time was clearly heard. This child is the seventh of eight children; all the others reported normal, as are the parents. No other heart disease known in the family. No syphilis or tuberculosis. Birth was normal, though the mother was greatly underfed during pregnancy and lactation. The child seemed healthy until the tenth month, when cyanosis of feet and hands were first noted. Cyanosis increased in intensity, and was general on admission to the hospital six months ago, the skin being dusky, the mucous membranes dark purple. All that time clubbing of fingers and toes was as well marked as at present. The child is fairly intelligent, repeating words and sentences, but he does not often form sentences. He makes no effort to stand or walk. The head is large, overhanging, with greatest circumference $20\frac{1}{2}$ in. Fontanelle is closed, but the depression is still very marked. Respirations average thirty per minute, but he frequently becomes very dyspnoic, and on several occasions seemed to have anginoid attacks. There have been no convulsions. The pulse is very variable, but is usually about 110 per minute. Temperature is inclined to be subnormal, but is generally above normal in the afternoon. Urine examination is negative. Blood-count showed 7,410,000 reds and 7120 whites on June the 1st, 1909; 9,040,000 reds and 110 per cent. hæmoglobin on November the 28th, 1909; and 8,980,000 reds, 7800 leucocytes, and 115 per cent. hæmoglobin on December the 1st, 1909. Dr. T. B. Holloway reports the following examination of the eye-grounds: "Cyanosis of conjunctiva, marked congestive appearance of each disc, giving it a dusky red appearance. Dilatation of smaller vessels about disc. Veins enormously dilated, tortuous, and very dark, and where crossed by arteries they show distinct depressions. Arteries are also tortuous, but less so than the veins. No exudates or hæmorrhages noted." In the last six months cyanosis has perhaps been a little less, but the skin still has a leaden hue, especially that of the face. The hands and feet are decidedly blue and the nails have a purple tint. The mucous membranes of the mouth are deep purple, becoming black when he cries. Crying at times causes epistaxis. Superficial veins are only moderately distended, but are most distinct over the temples, bridge of nose, and upper part of chest. There is no œdema. The heart area, on heavy percussion, gives right border $\frac{1}{4}$ in. to right of sternum; upper border, second rib; extreme left border in mid-axillary line, $3\frac{1}{2}$ in. from mid-sternum; left border in second interspace $2\frac{3}{4}$ in. to left of mid-clavicular line. The impairment over first interspace extends one finger-breadth to left of sternum. Apex-beat rather diffuse, but strongest impulse felt over body of heart. At present no murmurs can be detected. When examined last August a very loud blowing murmur could be heard all over cardiac region, with maximum

intensity in region of pulmonary artery. The right border of the heart was then thought to be at least $\frac{3}{4}$ in. to right of sternum. Skiagraph shows very decided enlargement of left ventricle and auricle, and a decided bulging above the auricle in region of ductus Botalli and pulmonary artery; no enlargement of right side of heart. The diagnosis is not positively made, but with history of previous murmur at base and with accentuated pulmonic second sound it is suggested that there is a wide defect in the inter-auricular septum, with stenosis of pulmonic artery and unduly patulous ductus arteriosus. It is believed that the right heart might not enlarge, and might even atrophy, if the opening in inter-auricular septum be large and if the intra-ventricular septum be practically complete. Transposition of vessels with other combinations of anomalies is, however, not excluded.

Dr. GRIFFITH said that the diagnosis in this case was certainly obscure, as was so likely to be in instances of congenital heart disease. Taking the symptoms as they exist at present, without reference to the previous history, the possibility of some anomalous origin of the large blood-vessels was certainly to be entertained. It seemed hard to reconcile the absence of every trace of murmur with the combination of very decided pulmonary stenosis, and of perforate septum ventriculorum and patulous ductus arteriosus, which must almost necessarily be present to enable the blood to escape from the right ventricle into the general and pulmonary circulation. The pulmonary stenosis by this age would very probably have developed some enlargement of the right side of the heart. The reason for the hypertrophy of the left side of the heart in this case is by no means clear.

Dr. GITTINGS said that the blood-count of 9,000,000 red cells was unusual. In a recent article on congenital heart disease ('British Medical Journal,' October the 16th, 1909), the highest erythrocyte count observed by George Carpenter was under 8,000,000.

Infectious Purpura.—Dr. C. J. HUNT read this paper by Dr. SIDNEY J. REPPLIER. He reported a fatal case of purpura hæmorrhagica closely following erysipelas. There were complete ecchymoses of both legs and the lower part of the abdomen, together with symptoms of cerebral hæmorrhage. Autopsy was refused. He mentioned the recognition of the infectious character of purpura, but superficial search of the literature failed to disclose an instance following erysipelas.

Pyelitis Simulating Appendicitis.—Drs. J. F. SINCLAIR and J. H. JOYSON reported a case of acute pyelitis in a female child, aged 8 years, with symptoms suggestive of appendicitis. Examination of the urine and a diagnosis by exclusion led them to a definite and final diagnosis of pyelitis. The leucocyte count varied from 12,000 to 18,600. The urine varied from 1010 to 1027 in specific gravity; was usually acid, showing traces of albumin, with pus, bacteria, and white blood-corpuscles. The symptoms elicited were fever, anorexia, headache, vomiting, pain in the right side of the abdomen, coated tongue, some rigidity of the right rectus muscle, and pain and tenderness most marked between McBurney's point and the costal margin.

Dr. JOYSON added that the question of diagnosis was of interest, as it was usually made by exclusion. This case resembled appendicitis, but was not typical; in fact, he believed it might be typhoid fever. Only after several days, after urine examinations, was the diagnosis made. The child made a perfect recovery.

Dr. D. J. M. MILLER ventured to say that, had this case occurred ten or more years ago, the diagnosis would not have been made, as the urine of infants was not often examined then. Urinary examinations are more frequent now, and as a result we hear more of urinary infections in infancy. Dr. Miller makes a routine practice of examining the urine of every infant with unexplained fever. He also called attention to the remarkable way in which pyelitis, as in Dr. Jopson's case, will simulate other disease. He recalled a case of pyelitis, with great anæmia, reported to this Society some years ago by Dr. H. C. Carpenter, in which the correct diagnosis was only made by examination of the urine. He also referred to a similar case of his own, in which the anæmia was so extreme as to suggest this as the essential lesion, in which, through careless examination by a hospital interne, the urine was pronounced to be normal; at autopsy, however, multiple renal abscesses, with pyelitis, were found. Specimens from this case were also exhibited before this Society.

Dr. GITTINGS said that although examinations of the urine are undoubtedly neglected in private practice, yet he believes that the many negative results of urine examinations in hospitals show the comparative rarity of pyelitis.

Dr. H. C. CARPENTER said he had seen two fatal cases of chronic pyelitis in infants—one male, the other female. In both cases only a faint trace of albumin was present with some pus-cells and the characteristic kidney pelvic cells. Both infants had intense secondary anæmia; in each case the blood-count showed less than 2,000,000 red cells.

Société de Pédiatrie, Paris.

October the 19th, 1909. Bulletin No. 7.

Staphylococcic Scarlatinal Meningitis.—MM. WEILL and MOURIQUAND reported this case, which is very unusual, streptococci being the usual micro-organism associated with such cases. The child, a male, was aged $3\frac{1}{2}$ years, and was admitted for scarlatina with an abundant eruption. Instead of normal convalescence, an obstinate coryza appeared with purulent nasal secretion showing abundant staphylococci and absence of streptococci. Symptoms of meningitis then supervened, which proved fatal. At the autopsy *Staphylococcus albus* was found in the cerebro-spinal fluid. Anti-streptococcic serum had been given without result.

Syringomyelia in a Child.—M. MÉRY showed a boy, aged 14 years, a report of which will be published later.

Torticollis as a Sign of the Onset of Typhoid Fever.—MM. NOBÉCOUET and PAISSEAU read the notes of two cases of torticollis in connection with typhoid fever in children. This condition is rare although it is noticed in Rilliet and Barthez' work. The author considered that the explanation was to be found in a serous arthritis in the articulations of the first cervical vertebrae.

Tuberculosis of the Larynx in an Infant, aged 3 months.—MM. NOBÉCOURT and TIXIER related this case. The child was in a deplorable condition, atrophic, and seemed as if suffering from the effects of defective feeding. The cough and voice were toneless, respiration difficult, and there was a certain degree of glottic spasm. The condition was thought to be due to diphtheria and an injection of antitoxin given. The autopsy showed general tuberculous lesions, especially in the larynx, where there was ulceration of the vocal cords and typical tuberculous granulations.

M. VARIOT said he had observed an analogous case of a child a little older, from eighteen months to two years. He had been admitted into the diphtheria ward at the Trousseau Hospital, aphonic and with laryngeal spasm and tugging. He was given an injection of serum, and tubage was thought of. Tuberculous ulcerations were found in the larynx. These cases were always very difficult to distinguish from diphtheria and should be recognised.

Facial and Ocular Paralysis.—M. GUINON showed a child aged 18 months, who, in a good state of health, was attacked with right facial paralysis with paralysis of the motor oculi of the same side. Lumbar puncture showed a marked lymphocytosis. He thought the diagnosis very obscure; tuberculosis was doubtful on account of the excellence of the child's general condition, and he suggested a simple poly-encephalitis.

M. NOBÉCOURT said that he had under his care at the present time a child who had facial paralysis and lymphocytosis, and though there had been some apparent improvement he concluded that there was cerebral tuberculosis, and the patient had already had two convulsive seizures.

M. TERRIEN recalled an analogous case in which he found a very small circumscribed tubercle in the bulb, at the site of the nucleus of the facial and nucleus of the external motor oculi.

General Telangiectasis and Congenital Cataract.—MM. TERRIEN and PRÉLAT showed the case of a girl, aged 6 years, admitted for a double congenital cataract. There was nothing special in the history; the parents were healthy, the child born at term, but did not walk till nineteen months old. The telangiectasic plaques, which formed the chief peculiarity of the patient, commenced at the age of three months, first on the face, then on the buttocks and limbs. At the same time there appeared brown blotches limited to the skin of the trunk. The patches were unequally scattered over the body; they attained their greatest development on the face, and on the limbs were more marked on the extensor surface; the trunk was entirely free. There was a small pigmentary nœvus on the internal surface of the right knee and a much larger one between the shoulders. There was a subcutaneous infiltration of the whole skin, but especially of the face; the eyebrows were atrophic—a condition suggesting a certain degree of thyroid insufficiency.

VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

Tics and their treatment (*Arch. of Pediat.*, 1909, p. 10).—E. W. **Scripture**.—A tic is a movement of a group of voluntary muscles which the patient does not intend to make and which he cannot help or can resist only with difficulty. The movement may be conscious or unconscious. In neurasthenia tics may be produced by imitation or by peripheral irritations, such as objects falling into the eyes, annoying collars and other articles of clothing, skin diseases, etc. In others the tics may arise from emotional disturbance. A tic is distinguished from normal movements by the lack of an adequate cause, and from spasmodic acts by its mental character. A spasm is not modified by attention, distraction, or emotion, usually affects muscles supplied by a single nerve, is not preceded by a feeling of compulsion, nor followed by a feeling of relief. From chorea a tic is distinguished by its systematic character and relatively longer pauses. Scripture has found that the most satisfactory method of treatment is conscious repetition, whereby voluntary imitation transforms the tic from a subconscious into a conscious act.

J. D. ROLLESTON.

Leontiasis ossea in a child with diabetes insipidus (*Arch. of Pediat.*, 1909, p. 14).—L. C. **Ager**.—A boy, aged 5 years, with a history suggestive of some form of meningitis at two years, had been suffering from diabetes insipidus for over two years, and a localised hypertrophy of the right frontal malar and upper part of the superior maxillary bones for one year. The polyuria and the osseous hypertrophy were possibly both due to the abnormal activity of the pituitary gland. X-ray treatment produced a severe burn. The issue of the case is not recorded.

J. D. ROLLESTON.

Urinary infection in infants and children (*Arch. of Pediat.*, 1909, p. 50).—M. T. **Lippe**.—Primary urinary infection is commoner in infants than in children and in females than in males. Most of Lippe's cases occurred in infants from 9 to 18 months old. In most cases infection takes place through the nurse or mother rubbing the soiled diaper against the urethra while cleaning the child after a stool. The constant symptoms are fever, pallor, anorexia, and disturbance of micturition, which is usually frequent and often painful. Restlessness, especially at night, is the rule. The diagnosis is made by examination of the urine. In bladder infection it is usually turbid. In infection of the renal pelvis it may be clear, if the bladder trouble has subsided. *B. coli* is the most frequent causative organism; less frequently strepto- and staphylococci are found. Microscopical examination shows pus cells, red cells (in early cases), epithelial cells from the bladder and kidney, bacteria, and casts. The disease tends to get well spontaneously, but can be shortened by proper treatment. In most cases hexamethylenamin is curative, in doses of 5 to 15 grains daily. Potassium acetate and infusion of digitalis is of benefit in some cases. Six illustrative cases are recorded.

J. D. ROLLESTON.

Ulcerative endocarditis (*Arch. of Pediat.*, 1909, p. 54).—K. **Schlevik** records a case illustrating the pyæmic form of ulcerative endocarditis in a girl, aged 3 years. *Staphylococcus pyogenes aureus* was cultivated from

the blood during life. At the autopsy a warty pedunculated vegetation with two small ulcers was found on the anterior flap of the mitral valve. On each side of the large vegetation was a small flat one. Numerous small infarcts were found in the spleen, from which the *Staphylococcus pyogenes aureus* was cultivated.

J. D. ROLLESTON.

The future of mentally deficient children (*Journ. Roy. Inst. Public Health,* 1909, p. 342).—**Caroline E. O'Connor** severely criticises the present system by which these children are given an expensive education till the age of sixteen years, and then turned loose upon the world. Being neither self-supporting nor morally responsible they inevitably end in the workhouse or prison. She thinks that a great saving might be effected by keeping them compulsorily throughout life in a residential home, where they would be able to contribute towards their own support. Such a home has been in existence for over fifty years in Massachusetts, and another has recently been opened at Sandwell Hall, near Birmingham, where the authorities endeavour to keep the inmates permanently, but possess no legal power of detention after sixteen.

J. D. ROLLESTON.

Diphtheria in Cologne (*Münch. med. Wochens.,* 1908, p. 1974).—**Berlin.**—3256 patients were admitted to the diphtheria block at the Augusta Hospital in Cologne between January 1, 1900, and July 1, 1908. 569 died—a mortality of 17·5 per cent. This relatively high figure was due to the large number of toxic cases. Patients were rarely admitted before the third day of disease, and had received little or no treatment at home. More than half of the deaths occurred within the first two days after admission. 662 had laryngeal symptoms which required operation. Of these 308 died—a mortality of 46·5 per cent. On 322 tracheotomy, on 215 intubation, and on 125 both operations were performed. Of these, 162, 69, and 77 respectively died. Local treatment consisted in syringing or gargling the throat with a 3 per cent. solution of hydrogen peroxide. Pyocyanase, recommended by Emmerich, had no effect in severe cases.

J. D. ROLLESTON.

Acute poliomyelitis (*Arch. of Pediat.,* xxvi, 1909, p. 321).—**H. Koplik.**—The epidemic which occurred in the summer of 1907 was the most extensive known in New York and possibly in the United States. Over 1200 cases were reported in the New York City and State. Children of all classes and of all ages were attacked. A few cases occurred in adults. Clinically there were three sets of cases: (1) Cerebral. In these somnolence was an early symptom, which was succeeded in extreme cases by signs of bulbar palsy, or was replaced by a clear sensorium, but complete paralysis of all four extremities. In some cases paralysis of the abdominal and other trunk muscles also developed. (2) Neuritic cases. Acute pains in the extremities, often referred to the joints, were the first symptoms, so that these cases were often mistaken for rheumatism. Gradually paralysis of some or all of the extremities developed with a clear sensorium. In the vast majority the knee-jerks were increased. (3) Ordinary cases of acute anterior poliomyelitis. Koplik believes that the infectious agent reaches the nervous system through the tonsils or intestines, as in many of the cases there was a history of tonsillitis, diarrhoea, or constipation.

J. D. ROLLESTON.

The health of children of mothers employed in tobacco factories (*'La Pediat.,'* March, 1909 No. 3, p. 161).—**R. Simonini** finds that the health of such children was below the average, the mortality greater. There seemed to be a direct relation between the tobacco and abortion or premature birth. Irregularity in suckling and too early recourse to milk substitutes appear to be the principal causes of the disorders of the infants. The quantity of milk in the mothers appeared below the average. The passage of nicotine into the lacteal secretion was not proven. The reaction, chemical composition and ferments of the milk in such mothers did not undergo any important modification. The hæmolytic power of the whey was maintained at a good level.

VINCENT DICKINSON.

Case of juvenile general paralysis (*'La Progrès Med.,'* May, 1909, No. 19, p. 242).—**Remond** and **Chevalier-Lavaure** report the case of a girl, aged 14½ years, the subject of general paralysis of less than two years' duration. Examination of stained preparations showed the ordinary lesions of general paralysis but of remarkable intensity; deformity, cellular chromatolysis, displacement and disappearance of nucleus, atrophy of many cells, infiltration of leucocytes around blood-vessels and in the pia mater, diffuse proliferation of neuroglia in the cortex and superficial sub-ependymal layers, destruction of many myelinic fibres. The spinal cord was affected in the same way, but the lesions were most marked in the posterior columns. The disease commenced as a pure demential type on a basis of mental debility without any deliriant reaction. The euphoria, shown by the fatuous smile displayed by the patient, could not have proceeded from any intellectual trouble, ideas of grandeur or of satisfaction, the intellectual abeyance being too profound to allow of even the most rudimentary delirium. Abolition of reflexes and motor inco-ordination were explained by the medullary lesions. As to the cause of the affection, Hutchinsonian teeth, old ocular troubles, enlarged glands and pulmonary lesions all pointed to the conclusion that congenital syphilis and tuberculosis were the determining causes acting on a favourable soil.

VINCENT DICKINSON.

Disorders of inanition: vomiting caused by insufficient food (*'La Clin. Infant.,'* May, 1909, No. 10, p. 289).—**G. Variot** draws attention to the fact that insufficient food is as dangerous as overloading the alimentary canal, and that fear of the latter may lead to worse evils. He was called to see a boy, aged 6 weeks, suckled by a healthy Italian wet-nurse, but who nevertheless did not gain weight. He weighed 3·6 kilog. as at birth. He had been put on a ration of 100 gr. per kilo, taking 360 gr. of milk in twenty-four hours. Dr. Variot ordered a more liberal ration; the mother objected that the stools were unhealthy and dark and that more food would increase the enteritis, but a good result followed his advice and opinion that stagnation of weight and abnormal stools were due to and kept up by hypo-alimentation. Although it seems paradoxical, the under-fed infant vomits as well as the over-fed, and vomiting from hypo-alimentation is as frequent in breast-fed infants when the lacteal secretion is deficient as in those on the bottle and who do not get the quantity of milk which they ought. This kind of vomiting quickly yields—sometimes the next day—as soon as larger feeds are given, especially if citrate of soda be added. If, however, we insist on reducing the alimentary ration until the stools become normal in appearance, or persist in giving vegetable broths, which have a very low nutritive value, under pretext of combating a gastro-enteritis, the child's condition becomes worse. It

should be realised that the gastro-intestinal reactions in hypo-alimentation are very much like those of over-feeding, that is to say, gastric spasm may supervene, and this cause of vomiting deserves to be recognised. Before reducing the ration of a nursling that vomits, a precise inquiry should always be made concerning the amount of food he absorbs, and the conclusion that he has been over-fed should not be made without definite information and due reflection.

VINCENT DICKINSON.

The influence of morbid heredity on the development of infants (*La Clin. Infant.*, 1909, Nos. 11 and 12, pp. 325 and 364).—This subject is treated of in an interesting article which discusses it from the points of view of syphilis, tubercle, alcoholism, lead and tobacco poisoning. The author quotes cases of congenital syphilis which show that, contrary to the too dogmatic assertions of certain syphilographers, artificial rearing is under some circumstances possible. It is no doubt impossible to bring up on the bottle weak and cachectic syphilitics, with gross osseous lesions or latent or apparent visceral lesions, but even breast feeding does not give satisfactory results under these conditions, and the majority of these infants die during the first months. Parrot got good results by making the children take the breast of she-goats and asses. A tribute is also paid to the efficacy and superiority of grey powder B.P. over all other mercurial preparations in the treatment of congenital syphilis.

With regard to tubercle.—If the children were not weakly it was generally possible to rear them on the bottle. Observations showed that maternal heredity had a more marked influence than paternal. Infants were often met with whose conception occurred at a time when the tuberculosis was in full evolution in the father but whose mother was in good health, born with normal weight and reared naturally. On the other hand, women in an advanced state of phthisis either abort or bring into the world weakly children whose future is very doubtful. When the heredity is double and both parents are diseased it would be expected that these effects would be more marked. But it is necessary to guard against believing in the absolute fatality of the manifestations of heredity and of their intensity under these circumstances. The variations and apparent irregularities in hereditary manifestations that Fournier has called attention to in syphilis from one pregnancy to another may, *à fortiori*, be met with in tuberculosis, without one being able at present to find plausible explanations of these facts, which apparently do not follow any scientific rule. Infants born of tubercular parents are more vulnerable than others, particularly those who are weakly and under weight. Their upbringing, especially by the bottle, presents sometimes the greatest difficulty, their growth is very slow, their muscles and bones are fragile, they do not walk until two years or later, and their bad nutrition persists sometimes for several years.

Alcoholic heredity.—In the *Goutte de lait* at Belleville puny and feeble infants were met with whose development was unsatisfactory, although they were well cared for, and in these cases it transpired that the father was an inveterate drinker and that the mother had already had miscarriages. Recent experiments have proved the passage of alcohol from the mother to the foetus, and Palazzi was able by hypodermic injections of alcohol in rabbits to produce sterility in 50 per cent. Féré, by inserting a small quantity of alcohol into hens' eggs, produced teratological deformities in the embryos. It is probable that alcohol does not act instantaneously, but rather by the repetition of the dose. Also the influence of the father on the

product of conception seems less marked than that of the mother, excepting in cases where procreation has taken place during a state of intoxication, or where the father has chronic alcoholism with organic lesions. Ballantyne asserts that alcoholism, especially of the mother, increases infantile mortality (1) by causing a large number of abortions; (2) by producing premature births; (3) by predisposing the child to serious illness in consequence of his congenital debility. After birth the milk of women who drink is often toxic, the children develop badly and are subject to convulsions, gastric irritability and wasting.

Lead poisoning.—The statistics of Roque and Gauyaire show a large mortality in the infants, especially during the first year, and that the maternal influence is much more marked than that of paternal, that the influence of the lead poisoning of one of the parents is in proportion to the intensity of that poisoning, that the influence is, moreover, more marked if both parents are attacked. The mother may continue to furnish the poison by her milk. Balland found in 115 grm. of milk an amount of lead of nearly half a milligramme. Legrand and Winter had the opportunity of making an autopsy on an infant born at seven and a half months and surviving only fourteen days. There was diminution of size in all organs, and lead was found in the liver and kidneys and all the viscera were more or less cirrhotic.

Tobacco poisoning.—The poison passes into the milk in the women employed in Government factories. One woman had fourteen pregnancies; the first seven before she entered the factory were normal, none of the others went on to term. Another had eight pregnancies, of which the two last alone went on to term, the woman having left the factory. The infants of tobacco-workers are difficult to rear, die in large numbers, and are small and prone to illnesses. At Havre, under these conditions, Piasecki found 223 deaths in 376 births. Kostial observed only 11 still-births out of 453 births, but 206 of the children died, 101 with disease of the brain and cord and convulsions, 9 meningitis, and 3 chronic hydrocephalics. Most deaths occur from the second to fourth month, *i. e.* at the time when the mother is giving a nicotinised milk. The results are markedly different between those infants suckled by the mother and those placed out to nurse.

VINCENT DICKINSON.

Infantile spinal paralysis (*Canadian Journ. of Med. and Surg.*, June, 1909).—**McKenzie** alludes to the occasional epidemics of this disease in Europe 1906, New York 1907, and Ottawa 1906. The writer mentions two cases at the age of 18 years. It is probably infective on the following grounds: Its seasonal occurrence, by far the greater number of cases occurring in July, August and September; occasional epidemics; the occurrence of several cases in the same household. Wickham in Sweden traced the disease from one hamlet to another, and showed that persons who themselves escaped were the intermediaries through whom the infection was conveyed. These symptoms are ushered in with malaise, fever, convulsions and headache, like those of any other acute infectious disease, and there are probably some abortive cases where no paralysis of a permanent character follows. On the other hand in some cases fulminating symptoms appear with bulbar symptoms and death in two or three days. In these at the necropsy meningeal involvement is found, and some of these cases have been called cerebro-spinal meningitis. Sachs sums up the treatment as follows: Drugs have no effect. Except as a matter of exercise electricity is practically

useless. Massage improves the circulation and should be employed. Methodical exercises are of the utmost importance, and should be persisted in. Tenotomies and tendon transplantations are of the greatest value. The disabled muscles should be kept relaxed by a suitable position of the limb, especially during sleep.

J. PORTER PARKINSON.

Tuberculous meningitis of cerebro-spinal type and prolonged onset ('*L'Echo Med. du Nord*, May, 1909).—Gugelot on February 1 was called to a little girl, aged $5\frac{1}{2}$ years, who had been attacked with fever, headache, and lumbar pains. She vomited twice. Temperature 39°C . The fever and headache persisted, and two days later some retraction of the head appeared. The knee-jerks were then exaggerated and Kœnig's sign positive. These symptoms continued till February 21, when the temperature fell to 37.4°C ., and the next day the pulse became irregular and there was much irritability. The pupils were irregular on February 24. There was some general hyperæsthesia. Coma appeared on March 10 and death occurred March 19.

J. PORTER PARKINSON.

Stenosis of pylorus in an infant; recovery ('*Canadian Journ. of Med. and Surg.*, March, 1909).—Machell reports a case fed on milk and barley-water from birth. From the first the infant vomited curds, mucus, gas and watery material. The vomit was at times large in amount. The bowels were never moved without assistance and the stools were dry, greenish, odourless, and sour. Loss of weight was persistent, and he was pale and apathetic. The epigastrium was rounded, bulging and tympanitic; occasionally waves traversed it from left to right. On deep palpation an indefinite nodule was felt in the right nipple line, half an inch above the umbilicus. At this time the infant was three months old. The stomach tube was passed and large quantities of mucus and curds were washed out; this was repeated daily, and after the first week vomiting ceased and the weight steadily increased. The author discusses the cause of the obstruction; it had existed from birth and at first he thought there was hypertrophic stenosis of the pylorus; later, as treatment was so successful, he thought it was probably spasm of the pyloric sphincter.

J. PORTER PARKINSON.

Syphilis hereditaria tarda ('*The Post-graduate*, April, 1909).—Dittrich reports two cases.—A boy, aged 12 years, the third of six living and three dead children, none of whom showed any syphilitic taint. At the age of six months he had snuffles, and sores at the corners of the mouth, leaving characteristic scars. Recently he has had interstitial keratitis and aural discharge. He has a large head, thick, protruding lips, saddle nose. Middle upper incisors notched, convergent and peg-top shaped. Recently he had a subcutaneous gumma about the size of a hen's egg on the right arm, and on both legs there are small superficial scars. His sister, aged 12 years, had been perfectly healthy till August last, when she fell and was supposed to have sprained her leg. Shortly after, a slight periosteal node developed on the front of the tibia of the left leg. This healed under treatment. The teeth show but slightly the Hutchinsonian type. She is the only one in a family of seven besides her brother who shows this hereditary taint.

J. PORTER PARKINSON.

Amaurotic family idiocy ('*The Post-graduate*, March, 1909).—Davis, of New York, describes the case of a male child of Russian-Jews. There

were five children, the first of whom had previously died of this disease. This child was well till the eighth month; it was then noticed the child could not sit alone or hold objects in the hands, and was apparently losing its eyesight. It also had diarrhoea. It refused to take the breast. There were no convulsions. The limbs were perfectly flaccid except the fingers and toes, which were slightly spastic. The bowels were constipated in the hospital, and the temperature ranged from 98° to 106.3° F., the pulse 100 to 144. The chest and abdomen were normal, and nothing was found to account for the fever. Difficulty of swallowing was marked before death. In the fundus of both eyes was the usual cherry-red spot, surrounded by a large greyish-white patch in the position of each macula. The blood-vessels were normal in size and the optic nerve was intensely white. The child was absolutely blind, became very emaciated, and died six weeks after it was first seen. The writer discusses in detail the morbid anatomy and the pathogenesis of the disease, for which we must refer those interested to the original paper. **Oatman** gives a full report of the histological appearance of the eyes, which may be summed up as follows: (1) Total absence of all inflammatory processes or other lesions which explain the ophthalmoscopic picture or blindness. (2) Presence of peculiar granules in the ganglion cells. (3) Commencing optic atrophy.

J. PORTER PARKINSON.

Diphtheria carriers (*'Canadian Lancet,' August, 1909*).—**Clutterbuck**, of Boston, who showed that a single negative examination is insufficient to prove a case non-infectious; a second one, however, reduces the error to 3 per cent. He shows 40 per cent. negative in 20 days, 60 per cent. before 25 days, 74 per cent. within 30 days, 86 per cent. within 35 days, and only 13 per cent. lasted from 33 to 65 days. With regard to persons who are in good health, but exposed to diphtheria, the organism may be found in a certain percentage, *i. e.* out of 768 contacts 147 showed the presence of the organism, 98 of which had the nose infected without the throat.

J. PORTER PARKINSON.

Cerebro-spinal meningitis in the Pas de Calais (*'L'Echo Med. du Nord,' July, 1909*).—**Petit** relates instances showing evidence of contagion, one in two sisters, others showing that the organism had been carried by a healthy person. Out of 99 suspected persons the organism was found in the healthy throats of 11. He reports 26 cases; 5 were not treated with anti-meningococcic serum, 4 of these died. Of 21 who were so treated 17 recovered. These statistics, though of small numbers, are sufficiently remarkable. The injections should be made as early as possible, even without waiting for the bacteriological diagnosis, if the cerebro-spinal fluid be turbid; but if this fluid be clear it does not negative cerebro-spinal meningitis without bacteriological evidence. In the great majority of cases two injections were sufficient, but in some daily injections for three, four or five days were necessary. The quantity injected was usually 10 to 15 c.c., and these injections repeated seemed more efficacious than single larger doses.

J. PORTER PARKINSON.

Two cases of microsphymia (*'El Brazil-Medico,' February 8, 1909*).—**Variot** says that this morbid condition is characterised by a permanently small pulse, cold extremities, mental deficiency, and ichthyosis. According to Vincent it is due to thyroid insufficiency. The first child measured

0.97 m. instead of 1.18 m., which would have been the normal height for corresponding to his weight and age. The pulse was very small, the ichthyosis moderate. After treatment with thyroid gland tablets the height increased to 1.15 m. and the child was much livelier. After suspending the thyroid treatment at the end of three weeks the microsphygmia reappeared. The second infant measured 1.02 m.; the pulse was filiform, the mental deficiency extreme, and there was marked ichthyosis of the legs. A skiagram showed that there was a general retardation in ossification. The first, a child aged 8 years, had the ossification of an infant of eighteen months, and that of the second bore the same ratio.

M. D. EDER.

Note on the treatment of infantile diarrhœa (*The Transvaal Med. Journ.*, January, 1909).—**Caiger** concludes that (1) the essential factors in the treatment of infantile diarrhœa are the entire withholding of all food and the abundant ingestion of boiled water. (2) This treatment is supported strongly, not only by its improved clinical results, as shown by a greatly diminished mortality, but also by modern experimental science. (3) Bacteriology teaches that a complete fast is one of the most effective measures in diminishing sepsis in the intestines. (4) Practical experience has now abundantly proved that young children can be kept entirely without food for from one to three days with perfect safety, provided water is freely given. (5) It therefore appears that the loss of appetite and thirst, so often met with in these cases, are factors of pre-eminent importance in the natural defensive processes of the organism.

M. D. EDER.

Morpinami's scarlatina toxin (scarlatin) and its use in practice (*Allg. Wien. med. Zeit.*, March 16 and 23, 1909).—**Monti** remarks that this differs from other serums since it is obtained by extraction from the blood of immunised animals by a method in which the albumins of the blood are changed. This is the reason why scarlatin is quite harmless, never giving rise to serum rashes, etc. No bad after-effects have been found even after continuous use in little children during six weeks. Morpinami's method rests on the clinically ascertained fact that anti-bodies are formed in the blood of scarlatina convalescents that have nothing in common with streptococci. Scarlatin is an antitoxin preparation to be given internally. It serves as a protection against infection; if the disease has occurred it is of value only so long as the scarlatina is uncomplicated by streptococcic complications; it is useless in septic cases. The earlier the remedy is used the more certain is one to prevent such complications. Scarlatin is put up in two strengths. Scarlatin I serves as a prophylactic; children over five and adults are given five drops night and morning in milk or water; under five the dose is one drop for each year twice daily. Scarlatin II is a therapeutic remedy in cases of declared scarlatina. Children over five are given five drops in milk or water every two hours, under five one drop per year every two hours. Monti from his own experience recommends for children over five, ten drops three times a day. The dose is diminished after the third or fourth day, and if the temperature is normal after the eighth day the serum is left off. In 211 observations by various writers there were seen 211 cases of scarlatina, amongst them 32 severe cases; 197 recovered and 14 died—a mortality of 6.5 per cent. Monti regards this as very good seeing the large number of severe cases. In his own 30 cases where it was used there were no deaths. Most favourable results have been obtained by its use as a

prophylactic, and the results of several writers—Campe, Mergel, and others—are given. Monti has only used it a few times himself for this purpose.

M. D. EDER.

An unusual case of trophoneuritis (*'St. Petersburg Med. Woch.,'* June 6, 1909).—Giese showed a girl, aged $7\frac{1}{2}$ years, who had measles three and a half years ago. Immediately afterwards the left hand became markedly smaller and the left half of the abdomen fell in. There is now entire absence of subcutaneous fat on the dorsal side of the left arm and on the left mesogastrium. The skin is everywhere marbled, more especially in these two places, whilst the temperature is higher than elsewhere. No atrophy of muscles, and the bones are normal. The circumference of the left upper extremity is notably less than that of the corresponding side. The muscle and tendon reflexes are more active on the left side. Electrically, the left rectus muscle is more easily stimulated than the right. Everything else quite normal. The condition of all the organs and the blood is normal. No cause could be found for the disease.

M. D. EDER.

A case of Barlow's disease in a breast-fed child (*'Wien. klin. Rundschau,'* August 1, 1909).—Hochsinger referred to a child which had been exclusively fed at the breast. It became pale and had pains in the lower limbs; there were swellings on the thighs and arms. Röntgen rays showed subperiosteal exudations of blood in the painful bones. The symptoms disappeared when Nestlé-meal was given. This case is against the view that this illness is caused by giving sterilised milk.

M. D. EDER.

Acute lupus (*'Wien. klin. Rundschau,'* July 11, 1909).—Pollak showed a girl, aged 5 years, with this disease as a sequel to measles. Solid livid tubercles with a centre of horny consistency were present on the hands and heels, the palms, and the tips of the fingers; miliary patches were present on the trunk and on the extremities. On the wrist and the central phalanges there were scrofulous gummata with central necrosis. The father was tuberculous, and a sister, aged 12 years, had an apical affection.

M. D. EDER.

Congenital myxœdema (*'La Semana Med.,'* June 24, 1909).—Hopff has treated three cases in children aged 2 months, 18 months, and 3 years respectively with thyroid extract, and noted a great and continuous improvement in all.

M. D. EDER.

Acute cerebral tremor of children (*Akuter cerebraler Tremor des Kindersalters*) (*'Monatschr. f. Kinderheilk.,'* May, 1909, S. 84).—Forest refers to a case published by Zappert under this title and then shortly narrates a similar one. A male child, aged 10 months, suffered from a febrile attack of varicella. A fortnight later a tremor of the whole body set in. Vomiting occurred, but no other symptom. The tremor continued during sleep; it was quite general, except for the face and eye muscles, and in character resembled that of paralysis agitans. The reflexes were active. The tremor gradually became less pronounced, first during sleep, and in three weeks had quite disappeared.

ERNEST JONES (Toronto).

The variation of the articulatory capacity for different consonantal sounds in school children (*'Internat. Arch. f. Schulhygiene,'* Bd. v, S. 137).—Ernest Jones sets out in this article a continuation of

the investigations previously recorded (see *BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1908, p. 265). Eight tables are appended. The author's conclusions may be quoted: "The main point illustrated by this investigation is the extraordinary complexity of the factors influencing the enunciatory capacity for difficult consonantal sounds, and the urgent necessity of exactly defining the circumstances of testing before generalising any results obtained in such an investigation. To mention only a few of the factors that influence the case with which a given consonantal sound can be enunciated: Nature of contiguous vowel, nature of distant consonant, nature of contiguous consonant, order of contiguous consonants, position of sound in the word, familiarity of word tested, nature of immediately preceding words. The most prominent facts that emerge from the present investigation are the following: *Th* (especially in initial and final positions), *ng* (especially in final position), *the* (especially in final position), and *v* (especially in intermediate position), were the sounds showing the greatest difficulty of enunciation. The voiced *the* was enunciated much better than the voiceless *th*, the difference being greater in the case of the girls, and the voiceless *f* than the voiced *v*. The chief differences between the two sexes were as follows: In general, as stated in the former article, the girls obtained decidedly higher marks. Sixty-three 'units' get higher marks with the boys, 132 with the girls. The boys excelled in the enunciation of *ng* (strikingly so with final *ng*), *zm*, and, to a less extent, of *dn*, *kn* and *gl*—all in the intermediate position. The girls excelled in the enunciation of (1) *the* (most with final *them* and *thed*), *th* (most with intermediate *thr* and *thrn*) and in all the compounds of these two sounds, (2) in all sibilant sounds and in nearly all their compounds—*zm* being a notable exception (most with the final *sk* and *zn*, and *s* compounds in the initial position). The influence of the position of the sound in the test word was shown most in the following instances in order of their importance: final *ng*, final *the*, intermediate *v*, initial *shr*, final *them* (especially with boys), final *gl*, final *kl* were all notably harder to enunciate than the corresponding sounds in other positions. Further, with the boys' initial *th* and initial sibilant combinations, especially *sku* and *skr*, and with the girls' initials *thr*, *gl*, *kn* and *dn* (the last three as intermediates), showed a similar difficulty."

AUTHOR'S ABSTRACT.

The proteid content of the cerebro-spinal fluid in general paralysis (*Rev. of Neurol. and Psych.*, June, 1909, p. 379).—**Ernest Jones** gives here a historical account of our knowledge of the subject, and then describes the various modes of testing for proteid in the cerebro-spinal fluid. In general paralysis a peculiar form of euglobulin is present in the cerebro-spinal fluid, and has been shown to be the carrier of the "anti-body" which is operative in the Wassermann sero-diagnostic reaction. This euglobulin is best tested for either by Noguchi's butyric acid test or by the ammonium sulphate ring test, which is here described, together with the results obtained.

AUTHOR'S ABSTRACT.

A review of our present knowledge concerning the sero-diagnosis of general paralysis (*Amer. Journ. of Insanity*, April, 1909, p. 653).—**Ernest Jones** here reviews this subject in detail, some 220 works being dealt with. Seven reactions are considered, and the theory of the Wassermann reaction fully gone into. The conclusions are too long to quote here, but those interested in the subject are referred to the original.

AUTHOR'S ABSTRACT.

Family nervous diseases (les maladies nerveuses familiales) ('*Arch. Gen. de Med.*,' March, 1909, p. 129).—**Massalongo** defines a family disease as one which (1) affects in the same form several members of the same generation; (2) has its onset at about the same age in the different members of the same generation; (3) arises independently of any acquired pathological antecedent. After giving an interesting general exposition of the subject he proposes the following classification: (1) Family ataxic syndrome (Friedreich's disease, hereditary cerebellar ataxy, etc.); (2) family spastic syndrome (paraplegia, amyotrophic lateral sclerosis, etc.); (3) family amyotrophic syndrome (Thomsen's disease, Eulenburg's paramyotonia, etc.); (4) family myoclonic syndrome (Huntingdon's chorea, tremor, etc.); (5) family paralytic syndrome (Tay-Sach's disease, Oppenheim's disease, etc.); (6) family tropho-vaso-motor syndrome (acute periodic oedema, lipomatosis, etc.); (7) family sensory syndrome (colour-blindness, word-deafness, etc.); (8) family neurotic syndrome (epilepsy, merycism, etc.); (9) family psychical syndrome (idiocy, dementia præcox, etc.).

ERNEST JONES (Toronto).

Relation of syphilis to chronic congenital hydrocephalus ('*Monatschr. f. Kinderheilk.*,' March, 1909, S. 771).—**Knoepfelmacher** and **Lehndorf** report the results of investigation of three cases of this nature. Wassermann's reaction (complement deviation) was negative in all, a fact that speaks against the syphilitic origin of the affection.

ERNEST JONES (Toronto).

Sepsis due to a diphtheroid bacillus in an infant with the manifestations of Winckel's disease (Sepsis aus diphtherieähnlichem Bazillens bei einem Säuglinge mit Klinischen Erscheinungen Winckelscher krankheit) ('*Monatschr. f. Kinderheilk.*,' March, 1909, S. 717).—**Francioni** gives a detailed description of a case of Winckel's disease (acute hæmoglobinuria with jaundice). The patient was a male child, aged 26 days. He died in three days. From the blood, taken during life, a pure culture was grown of a diphtheroid bacillus; this is described at length. The authors conclude that Winckel's disease is rather a syndrome than a disease, for it can be produced in various ways and by various bacteria.

ERNEST JONES (Toronto).

The frequency of tuberculosis in infants ('*Münch. med. Wochens.*,' No. 7, 1908).—**Sehlbach** has analysed the records of 1390 necropsies on infants and children up to nine years of age, and finds mention of tuberculous lesions in 180 of the cases. Among 1150 infants under one year of age the percentage was 7·8. During the first three months it was low, from the fourth to the ninth month it was high, and during the last quarter lower again. In the second year the curve rises suddenly and then subsides considerably, so that in the third and following years it remains somewhere about 50 per cent. The author concludes that tuberculosis during the first year is due to infection either from the mother or by the food, while after the first year the infection is from other external sources, such as the soil and objects with which the children come into contact. Although the tuberculosis of infants sometimes shows evidence of resistance to infection in the shape of localised or encapsuled lesions, the resistance is usually very low and an early death commonly results. Only a small percentage of infected children carry the disease without symptoms to a later age, when it becomes active. These facts controvert Behring's theory that tuberculosis in infancy and

childhood may heal, but that the infection leaves the system liable to a subsequent introduction of the tubercular virus. The theory that predisposition to tubercular infection is caused by either a juvenile healed or latent tuberculous process is based upon no facts.

T. R. WHIPHAM.

Infantile spinal progressive muscular atrophy (*Med. Press,* June 16, 1909).—At the Gesellschaft für innere Medizin at Vienna **Popper** showed two sisters, aged 4 and 2 years respectively, who seemed to be suffering from the Hoffmann-Werdnig disease (progressive muscular atrophy in the young). The children were healthy and active when born, and had no apparent weakness in the arms or legs until they were six months old, when a gradually increasing weakness of the limbs began, the lower extremities being first affected. The weakness in course of time extended over the entire body until the children were unable to sit up without support, while the limbs were quiet helpless, the legs soon becoming emaciated. The elder child was fairly well nourished, and the cranium, brain, and cerebral nerves were normal. The younger was soft and flabby with apparent fatty degeneration of the cellular tissue, so that the muscles of the extremities could be scarcely felt. In consequence of the weakness the child could scarcely raise its hand to its mouth. The left arm at the shoulder-joint was quite loose, and could be bent far beyond the normal range; there were no contractions or fibrillary tremors. When placed erect the child fell forward, and the head had to be held up. The muscles of the shoulders, back, and pelvis were distinctly atrophied, and the lower extremities were in the same condition. There was no hypertrophy present, and both feet were in the equinovarus position. There were no tendon reflexes, and the reaction of degeneration was present. The sphincters were normal, sensibility was undisturbed, and the intelligence was active. The elder girl was in a similar condition, but in her the disease appeared to be more protracted, as slight contractions could still be obtained in the lower limbs, which were held in the bent position. These symptoms seemed to agree with Hoffmann and Werdnig's cases recorded under the name "Chronic Spinal Muscular Atrophy having a Congenital Basis," or, as they preferred later to designate it, "Premature Infantile Progressive Spinal Muscular Atrophy."

T. R. WHIPHAM.

What is scrofula? (*Wien. klin. Woch.,* No. 9, 1909).—**Escherich** puts his conclusions in the following order: Before the first appearance of scrofula and later during the disease there exists a constitutional anomaly, known as the status lymphaticus. After infection with tubercle, there occurs an encapsulated tuberculous focus, followed by an "allergic" state, with a special susceptibility and over-sensitiveness to external injuries and especially to the smallest quantity of tuberculous toxin which is contained in the secretions. Then arises the pathognomonic superficial catarrh, and later by means of the lymph or blood-vessels there are deposited metastatic foci of a local or general tuberculosis. Thus scrofula is nothing else than tuberculosis in childhood, implanted on a lymphatic catarrhal constitutional state.

J. E. BULLOCK.

Idiosyncrasy to cow's milk in an infant (*Monatschr. f. Kinderheilk.,* Bd. 7, No. 10).—**Freund**, as the result of his experiences with an infant who in a marked degree showed an idiosyncrasy to cow's milk, with all the severe clinical symptoms after feeding with cow's milk but not with human milk, found that the characteristic idiosyncrasy could be produced by—(1)

milk mixed with a quarter of its bulk of water gruel; (2) buttermilk; (3) butter; (4) casein and sodium; (5) whey. The behaviour of the child towards these substances could not be explained by any theories hitherto propounded; besides, it could be clearly shown that not only the whey of cow's milk, but also other ingredients brought about the toxic symptoms. The case is also interesting from the fact that during the time of the idiosyncrasy, but not after, there was a marked positive reaction to Pirquet's tuberculin test and also a special susceptibility to mercury.

J. E. BULLOCK.

The percutaneous tuberculin reaction of Moro (*Beit. zur Klin. der Tuberculose*, Bd. 11, Heft 3).—**Wetzel** has tested Moro's tuberculin ointment reaction in 221 cases of certain tuberculosis in various stages and position and also in healthy subjects. The application appears to him to have certain advantages over Pirquet's and Wolff-Eisner's methods. He comes to the conclusion that the reaction is obtainable in adults, but is not of special service; it shows latent tuberculous foci, and in his clinic cases of unsuspected tuberculosis gave a positive reaction in 70 per cent. of the cases. In children under ten, the positive result clinched the diagnosis of suspected active tuberculosis. The amount of reaction is no indication of the severity of the disease.

J. E. BULLOCK.

The importance of the ophthalmic tuberculin reaction as affecting sanatorium treatment (*Zeit. f. Tuberculose*, Bd. 13, Heft 6).—**Wolff-Eisner** states that sanatoria labour under the great mistake that they receive active and quiescent cases indiscriminately, whereby statistics are vitiated. Only cases of active tuberculosis ought to be admitted; local reaction is of great help in determining the selection of such cases. He says: "The answer to the question, What is active tuberculosis? is the all-important and chief problem of the Tuberculosis Inquiry." Accordingly the conjunctival reaction, so readily applied in children, is capable of affording the greatest service, as it is the only early diagnostic sign which shows active tuberculosis.

J. E. BULLOCK.

Cyto-diagnosis as a means of detecting the early stage of tuberculosis of the lungs (*Beit. zur Klin. der Tuberculose*, Bd. 11, Heft 3).—**Eisen** and **Hatzfeld** have tested the assertion of Wolff-Eisner as to the early diagnostic significance of lymphocytosis in the sputum of phthisical patients, and come to the following conclusions: In the sputum of early stages of tuberculosis of the lungs the polymorphonuclear leucocytes are found in overwhelming numbers; the same picture—a pure leucocytosis and no lymphocytosis—was found nearly always in the sputa of the second and third stages of the disease. The cyto-diagnostic investigation of the sputum is thus not applicable as a means of early diagnosis. Moreover, the various forms of chronic bronchitis show a similar cytological result. Contrary to Arnheim they never found leucocytosis in the sputum of pertussis at any stage.

J. E. BULLOCK.

Tuberculous infection through the tonsil and adenoid (*New York Med. Journ.*, August 7, 1909).—**Pratt** believes that tonsils and adenoids are important ports of entry for tuberculosis of the cervical glands, the larynx and the lungs, and therefore that they should be removed in all tuberculous cases to eliminate present and future source of infection.

MACLEOD YEARSLEY.

Pathology.

Leucocytes in pulmonary diseases of children ('*Arch. of Pediat.*,' 1909, p. 195).—**J. S. Wile**.—Pulmonary tuberculosis causes no leucocytosis unless secondary infection occurs, in which case there is an increase of polynuclear neutrophilic leucocytes. As the infection increases the eosinophiles decrease. Improvement is accompanied by increase of the eosinophiles and by a decrease of the polynuclear neutrophiles. A decrease in the eosinophiles is therefore of bad omen, especially if accompanied by a decrease of basophiles. Eosinophilia is the most characteristic feature of emphysema. When bronchial asthma ensues the percentage of eosinophiles may rise as high as 54. Polynuclear neutrophile leucocytosis is found in bronchitis of the smaller tubes, pleurisy, pneumonia and empyema. Acute bronchitis of the larger tubes and chronic bronchitis cause no leucocytosis. In empyema the percentage of neutrophiles is high. In Wile's cases it averaged 73. In pneumonia the percentage may range between 75 and 95. Leucocytosis falls just before or during the crisis. Persistence of a high neutrophile percentage after the crisis indicates delayed resolution, empyema, gangrene, or other complications. During the attack the eosinophiles disappear, but reappear in convalescence. In broncho-pneumonia the leucocytes decrease unless a complication ensues.

J. D. ROLLESTON.

On bacterial association in acute gastro-enteritis in infants ('*La Pædiatria*,' August, 1909, No. 8, p. 561).—**S. Cannata** and **F. Luna** conducted a complicated research into this matter, experimenting with *B. coli*, *Proteus vulgaris*, diplococcus, streptococcus, and sarcina, and derive the following conclusions: (1) *Proteus vulgaris* and *B. coli*, normally present as innocuous hosts of the gastro-intestinal track of infants, may acquire a marked virulence. (2) This virulence may be increased by reciprocal action of the above-mentioned germs and also by the action of other intestinal micro-organisms upon them. (3) The increase in virulence of *proteus* and *coli* may be due to living bacteria, to proteins, and toxins. (4) It may, on the contrary, happen, as was observed in one case of acute gastro-enteritis, that a virulent *B. coli* may retain its virulence and not be influenced by the action of other germs which live together with it in the intestine. (5) Non-virulent *B. coli* isolated from the fæces of a normal infant may become so owing to the influence of certain intestinal germs.

VINCENT DICKINSON.

Therapeutics.

Fresh air in the treatment of disease ('*Arch. of Pediat.*,' 1909, p. 88).—**W. P. Northrup** recommends that all febrile cases, measles possibly excepted, should be treated in the open air. Patients so treated, especially pneumonia cases, sleep and eat better and recover more quickly and completely. For the success of the treatment it is essential that both patients and nurses should be comfortable all the time.

J. D. ROLLESTON.

Morphia in laryngeal diphtheria ('*Gaz. hebdomadaire des Sci. Méd. de Bordeaux*,' 1909, p. 134).—**F. Carles** and **R. Dupérié** record twelve cases in which this treatment, advocated by Lesage, Ausset, and others, was adopted (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1909, p. 132). The results were most disappointing. The relief produced was only transitory, and the

natural powers of resistance were so much depressed that surgical interference was required sooner than in cases not so treated. Though morphia may be useful in cases where spasm is predominant, such as laryngismus stridulus or acute laryngitis, it has no effect upon the mechanical obstruction produced by the diphtheritic membrane and inflammatory oedema of the laryngeal mucosa. Since in laryngeal diphtheria the laryngeal obstruction is due more to mechanical stenosis than to spasm, the writers consider that the use of morphia in this disease is both useless and harmful.

J. D. ROLLESTON.

The treatment of cerebro-spinal meningitis by the serum of Flexner and Jobling, with a report of 523 cases (*New York State Journ. of Med.*, vol. ix, 1909, p. 239).—**L. Emmett Holt**.—The 523 cases consist of patients treated with this serum in New York, Boston, Baltimore, Washington, Philadelphia, Cleveland, Chicago, Edinburgh and Belfast. No case was included in which the clinical diagnosis was not confirmed by examination of the cerebro-spinal fluid. To determine the value of the serum Holt considers the mortality, the duration of the disease, and frequency of complications among cases so treated: 368 cases recovered and 155 died—a mortality of 29·6 per cent. In cases not treated with serum the mortality ranged from 50 to 80 per cent. The reduction of mortality in young children is most striking. Whereas among 61 children under two years not treated by serum the mortality was 90 per cent., of 59 serum-treated cases 25 died—a mortality of 42·4 per cent. The average duration of the disease in 220 serum-treated cases in which a reliable history could be obtained was eleven days, whereas in 350 recovered cases treated in 1905, the duration was five weeks or more in 50 per cent. Of 270 serum-treated cases the disease ended by crisis in 69, or 25 per cent., by lysis in 201, or 75 per cent. Relapses occurred in about 5 per cent., but were very seldom fatal. Complications and sequelæ were rare and usually confined to the late cases. In almost all the others the recovery was complete. The use of large doses is recommended. Thus the initial injection should be 30 c.c. and in very severe cases 45–50 c.c. The very small doses used at first were probably responsible for many of the failures, exactly as occurred with diphtheria antitoxin. Early treatment is important. Thus the mortality among 110 cases injected during the first three days was 12·7 per cent., among 120 injected between the fourth and seventh days 23·3 per cent., and among 91 injected after the seventh day 44 per cent.

J. D. ROLLESTON.

Treatment of diphtheria (*Berlin. klin. Wochens.*, 1909, p. 1202).—**F. Meyer**.—The constant presence of severe lesions of the suprarenals in animals poisoned by diphtheria toxin and the fall in blood-pressure preceding death suggested to Meyer the use of adrenalin in large doses for the circulatory disturbance in diphtheria. The subcutaneous injection of 1 c.c. of adrenalin chloride (1 in 1000) in 19 c.c. of normal saline solution is recommended. Unlike Pospischill Meyer never had any local abscesses from this treatment (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1909, p. 133).

J. D. ROLLESTON.

The treatment of hæmophilia (*Progrès méd.*, May, 1909, No. 21, p. 265).—**G. Laroche** and **E. Vaucher** give a review of our present knowledge of this subject with an extensive bibliography. In speaking of the

treatment of this condition they remark the use of *gelatin*, which may be applied locally during an attack of epistaxis (P. Carnot), introduced through the digestive track as an enema, or subcutaneously (20 to 100 c.c. of artificial serum gelatinised to 1 to 5 per cent.). Heyman and Baginsky have met with success, P. Carnot speaks with reserve, while Labbé and Froin have shown that it has no action on hæmorrhages and that the coagulability of the blood was not increased in their patients. *Thyroid* feeding (Dejage, Combemale, B. Jones, Faller) has been sometimes followed by success. The administration of *liver* extract has given no appreciable result. Wright and Carnot have used chloride of calcium both locally and internally as preventive and curative, but the action is only transitory, and Wright, moreover, has shown that if the administration is continued for more than three days, the coagulability of the blood, at first increased, becomes diminished. It must therefore be given in doses of 2 to 4 grm. for periods of three days followed by a similar period of repose. Lactate of calcium was more efficacious and better tolerated. *Injection of horse-serum* seems the best treatment; Frey and Weil have shown its action on the blood of hæmophiles. In sporadic hæmophilia, sero-therapy renders the coagulation normal at the end of two days; its effect lasts twenty-five days and then diminishes. At the end of three months the anomalous condition of the blood becomes re-established. The treatment does not act upon the cause of the hæmophilia, but influences its physiological mechanism. In hereditary hæmophilia coagulation is accelerated, but remains abnormal in time and form. The serum of man, rabbit, horse and ox have proved effective, although *in vitro* the action of human serum is the most marked in arresting the hæmatic lesions. Fresh serum must be employed, although results have even followed the use of that three months old. Bovine serum alone caused serious accidents and therefore must be avoided. If fresh horse-serum cannot be obtained anti-diphtheritic serum can be used. For intra-venous injection the dose is 10 to 20 c.c., subcutaneously 20 to 40 c.c.

VINCENT DICKINSON.

Oxygen in severe cases of whooping-cough ('*Lyon Méd.*, August, 1909, No. 34, p. 309).—E. Weill and G. Mouriquand treated thirty cases of this disease by inhalation of oxygen given every hour. Their cases may be divided into two classes: (1) Those in which the severity of the attacks themselves placed the child in danger, and (2) those in which bronchopneumonia was threatened. In almost all the cases the result of the use of oxygen was simple; there was a marked lessening in the violence of the attacks but rarely a diminution in their number. From the point of view of gravity the number of attacks is of less importance than their violence and duration, which often entail the threatening of asphyxia. The sedative action of the oxygen is usually rapid, and hence cyanosis diminishes even during the attacks. It also has a beneficial effect on the prostration and somnolence so common during the intervals. Its stimulating action minimises anorexia and often increases the appetite to an extraordinary extent. The authors consider their method of treatment compares most favourably with that by antipyrin or morphine. The gas can be washed before its administration, which should not be niggardly, 10–20 litres being given at the commencement of a paroxysm.

VINCENT DICKINSON.

The internal administration of protargol in children's diseases ('*La Pediatria*, August, 1909, No. 8, p. 618).—A. Ramacci has given this

drug in (1) acute gastro-enteritis and infantile cholera, (2) catarrh of the large intestine, and (3) acute and chronic catarrh of the small intestine. The drug was given in 100 gr. of vehicle, half syrup and half distilled water, in doses varying from 60 centigr. to 1·30 grm. *per diem*. The result was in all instances good. In cases where the patient had been placed on a water diet, and where bismuth, hydrochloric acid, lactic acid, and tannate of quinine had failed, the desired effect was produced by protargol.

VINCENT DICKINSON.

Polyvalent anti-dysenteric serum in the treatment of infantile dysentery (*Journ. de Med. de Bordeaux*, August, 1909).—**Coyne and Auché** publish seven cases, all of which were cured. Some were due to Shiga's bacillus and some to the Flexner group. Improvement began usually within twelve hours after the injection of 10 c.c. of this polyvalent serum, even though some of the cases were in a very grave condition previous to its administration. The temperature fell, the stools became less frequent and more normal, and the general condition improved. Most of the cases had been under treatment for a week or more without improvement before the serum was given.

J. PORTER PARKINSON.

Ophthalmology.

Observations on experimentally induced choked disc (*Bull. of the Johns Hopkins Hosp.*, April, 1909, p. 95).—**Harvey Cushing and Bordley** report the results of experiments on some twenty dogs. They were able to reproduce both acute and chronic papillitis indistinguishable from that characteristic of tumour of the brain. The subject is fully discussed. They conclude (1) that the occurrence of the neuro-retinal œdema is primarily dependent on the passage of cerebro-spinal fluid under tension from the sub-arachnoid spaces of the interpeduncular region into the vaginal sheath of the optic nerve, and that cerebral decompression often allows the process to subside, owing to a resultant diminution of tension from release of the confined fluid; and (2) that the experimental work corroborates many of the more recent clinical observations in showing that a choked disc, even of considerable height, may be rapid in its formation, and, provided it has not gone on to the stage of new tissue formation, may rapidly subside; and thus speaks strongly in favour of a mechanical as opposed to a chemical or inflammatory origin for the lesion.

ERNEST JONES (Toronto).

Otology, Laryngology, and Rhinology.

Mastoiditis due to the micro-organisms of Vincent's angina (*Journ. Amer. Med. Assoc.*, vol. LIII, 1909, p. 116).—**D. G. Yates**.—A girl, aged 12 years, who had been suffering from a neglected ear discharge for several months, was admitted to hospital with a mastoid abscess. Examination of the thick and fœtid pus evacuated revealed Vincent's organisms, which were still present more than a month after the abscess had been opened. Recovery took place after irrigation with normal saline solution and North's lactic acid preparation.

J. D. ROLLESTON.

Inspiratory stridor and dyspnoea in infants (*Arch. of Pediat.*, xxvi, 1909, p. 401).—**A. D. Blackader** and **H. S. Muckleston** discuss congenital laryngeal stridor and thymic asthma, and record some illustrative cases. Most recent observers regard congenital laryngeal stridor as due to defective development of the larynx itself rather than to any spasm or inco-ordination. Cyanosis rarely occurs because the passage is seldom completely closed as in laryngismus. In most cases the stridor is noted a few days after birth. Both sexes are equally susceptible. One sixth of the recorded cases have died from respiratory affections. The stridor due to an enlarged thymus differs markedly from congenital stridor. It is present both with expiration and inspiration, is persistent, is not influenced by sleep, and is often associated with intense dyspnoea and cyanosis.
J. D. ROLLESTON.

Return of laryngeal symptoms at the time of the serum rash in children suffering from laryngeal diphtheria (*Gaz. hebdom. des Sc. med. de Bordeaux*, 1909, p. 279).—**Rocaz** and **F. Carles** record five cases in which, four days after injection and concurrently with the serum urticaria, there was a return of laryngeal symptoms necessitating in three cases intubation and in one tracheotomy. All recovered. Two of the patients were boys and three girls. The condition is attributed to a laryngeal enanthem, oedema of the laryngeal mucosa being co-existent with the cutaneous eruption. The occurrence of laryngeal symptoms during the serum disease was described by Sevestre and Aubertin in 1903, but is very uncommon. (Among 222 cases of laryngeal diphtheria observed by the abstractor, in only three was the serum rash associated with a return of the laryngeal symptoms, but in no case were they sufficiently urgent to require surgical interference.)
J. D. ROLLESTON.

Adenoids, nocturnal incontinence and the thyroid gland (*Lancet*, May 1, 1909).—**Williams** gives thirteen cases in which he used thyroid extract in connection with the treatment of adenoids and nocturnal enuresis in children. He believes that adenoids can no longer be regarded as a cause of nocturnal enuresis. He has had remarkably good results in treating this condition with thyroid extract, although he cannot explain the good results of his method of treatment.
MACLEOD YEARSLEY.

Anæsthesia for adenoid and tonsil operations (*Boston Med. and Surg. Journ.*, July 15, 1909).—**A. H. Miller** advocates nitrous oxide, ethyl chloride, or a single administration of ether when the operation is a short one; in long operations he prefers ether or chloroform by means of a Junker apparatus. He notes the danger of chloroform on account of the lymphatic diathesis.
MACLEOD YEARSLEY.

Aural complications in the exanthemata (*Boston Med. and Surg. Journ.*, July 15, 1909).—**C. R. C. Borden** discusses the ear complications of measles, scarlet fever and diphtheria only, with illustrative cases. In conclusion, he emphasises the greater frequency of middle-ear inflammation in children than in adults during scarlet fever, pointing out that in measles the relative liability is equal. He urges the necessity of early operative interference.
MACLEOD YEARSLEY.

Congenital occlusion of the cartilaginous canal (*Boston Med. and Surg. Journ.*, July 15, 1909).—**H. P. Mosher** describes the interesting

condition found in girl twins, aged 4 years. In both the cartilaginous canal gradually tapered to a point and about half an inch in became occluded. One twin had at birth a malformation of the left lower eyelid, since corrected. Both children were otherwise normal. Exploratory operations were undertaken. The description of the conditions found should be read in the original paper, with the illustrations given.

MACLEOD YEARSLEY.

The faucial tonsils and the teeth (*Journ. Amer. Med. Assoc.*, June 19, 1909).—**Hudson-Makuen** describes in detail the close inter-relation between diseased conditions of the tonsils and teeth, and states that we cannot cure mouth-breathing and its resultant disastrous effects in all cases by merely removing tonsils and adenoids. When there are dental irregularities coincident, these, too, must be regulated. Tonsils cause dental deformity by pressure on the molars. Old degenerated tonsils should be removed though they are no longer active.

MACLEOD YEARSLEY.

Politzerisation in children (*Arch. f. Ohrenheilk.*, Bd. 76, Heft 1 and 2).—**Gomperz** points out that Wall politzerises young children who refrain from crying at the moment when such crying is necessary for inflation by passing a finger or a spatula to the base of the child's tongue and inflating during the retching movements thereby set up. Gomperz, with the same object, has the child's head held back and inflates *via* the nostril whilst an assistant syringes water into the child's mouth. He has a strong belief in the value of politzerisation in the treatment of acute otitis in early infancy, but does not employ it until the acute inflammatory phenomena are on the wane. In very young infants the bag should be compressed in the smallest possible manner.

MACLEOD YEARSLEY.

Otogenous intra-cranial complications in children; presentation of a case (*New Orleans Med. and Surg. Journ.*, January, 1909).—**Homer Dupuy** considers extension to intra-cranial structures from temporal bone suppurations from (1) perforations through the tegmenta tympani et antri and the sulcus of the lateral sinus; (2) through natural channels, along the facial and auditory nerves, cochlea, and semicircular canals; (3) through the blood and lymph-vessels. He points out the vulnerable area of the petro-squamosal suture and the "safety-valve action" of the squamo-mastoid suture. The case is described of a male child, aged 5 years, with lateral sinus thrombosis and extra-dural abscess, who recovered after operation.

MACLEOD YEARSLEY.

Adenoid hypertrophy during the first year of life and its treatment (*Journ. Amer. Med. Assoc.*, August 21, 1909).—**Freeman** emphasises the following points: Prominent symptoms are (1) snuffles, (2) mouth-breathing, (3) recurrent colds, (4) cough, (5) otitis media. Operation in infancy can be done quickly without anæsthetic and with very little shock, and if adenoids do cause symptoms they should be operated upon even as early as the fourth or fifth month of life. If an anæsthetic must be used it should be nitrous oxide.

MACLEOD YEARSLEY.

Diagnosis of otogenic meningitis (*Journ. Amer. Med. Assoc.*, September 11, 1909).—**Mygind** discusses otogenic meningitis and does not agree that it is caused by retention of pus in the middle ear, but rather by

the nature of the suppuration combined with the anatomic relations of the petrous bone and mastoid process. There is but one trustworthy objective sign, viz. turbidity of the cerebro-spinal fluid, obtained by lumbar puncture. The disease is an acute febrile one with diffuse brain symptoms, but focal symptoms are frequent, viz. nystagmus, facial paralysis, Jacksonian epilepsy, hemiplegia, irregular pupil, cervical rigidity, and Kernig's sign. Meningitic symptoms rarely occur sooner than a week after the onset of an acute suppurative middle-ear process. True meningitis is differentiated from meningismus, so common in the child, by its more acute course and the fact that otogenic meningitis rarely occurs in infants under one year. Lumbar puncture should always be done for diagnostic purposes, but has no therapeutic effects.

MACLEOD YEARSLEY.

Surgery.

Imperforate anus with recto-vesical fistula (*Arch. of Pediat.*, 1909, p. 133).—**E. F. Kiser**.—The patient was a male child who was operated on three hours after birth. A perinæal incision was made without an anæsthetic, and carried up for $1\frac{1}{4}$ in., but no rectal pouch could be found. Inguinal colostomy was not performed owing to the child's general condition. Death occurred on the twelfth day. At the autopsy the rectal pouch was found communicating with the bladder through a fistula $\frac{1}{4}$ in. in diameter. The family history is of interest. The patient was the fourth child. The first children were twins. Of these the girl was normal, but the boy had an imperforate anus and died in a few days without operation. The next child, a girl, was normal.

J. D. ROLLESTON.

Congenital hypertrophic pyloric stenosis (*Arch. of Pediat.*, xxvi, pp. 275 and 283).—**J. F. Bell** and **B. F. Curtis**.—A girl, weighing $9\frac{3}{4}$ lb. at birth, began vomiting in a forcible manner after nursing when six days old. For two weeks the weight remained stationary, and then began to fall, and the urine and fæces became scanty. Examination showed distension of the gastric region, while the lower part of the abdomen was flat and soft. Medical measures proving unsuccessful, an operation was performed by Curtis when the child was nine weeks old. The pylorus was found to be the seat of a tumour, which proved to be a fibro-myoma and was removed by incising the muscular and peritoneal coats only and leaving the mucous membrane intact. Owing to threatened collapse stomach feeding was begun very early after the operation, and vomiting soon ceased. When seen nearly two months after the operation the child weighed 12 lb. 2 oz.

J. D. ROLLESTON.

Fibroma sublinguale (Riga disease) (*Med. Press*, August 4, 1909).—**Kantz** reports the case of a child, aged 9 months, who until a fortnight previously had been perfectly healthy. It had been breast-fed and had cut its first teeth when six months old. In the frænum linguæ was a large clear swelling, covered with a fungus, around the base of which a red greyish annulus, hard and resisting, was present. The diagnosis was fibroma sublinguale, or Riga disease, as it has been called recently, the condition being very common in that district. These fibromata are considered to arise from the irritation of the cutting of the incisors and feeding at the breast. The treatment in such cases is patience, as the swelling may disappear spontaneously, but if removed, will recur.

T. R. WHIPHAM.

Adeno-sarcoma in the newly-born (*Transvaal Med. Journ.*, March, 1909).—**De Villiers** reports a case of tumour in the right parotid region, which was present at birth, and had reached the size of a pigeon's egg in ten days. When the child was a month old an attempt was made to remove the growth. The tumour was black in colour and very friable. A similar dark lump was found on the upper arm. A month later the tumour had recurred, and had spread so that it nearly closed the right eye and greatly interfered with deglutition, the child being scarcely able to open its mouth. Microscopically the tumour proved to be an adeno-sarcoma.

T. R. WHIPHAM.

Another case of a foreign body in the right bronchus removed by bronchoscopy (*El Siglo Medico*, June 19, 1909).—**Botella** describes a case of suffocation in a child aged $5\frac{1}{2}$ years who had swallowed a peanut. There was complete absence of breath-sounds on the right side of chest. The child was chloroformed, and a Killian tube of 7 mm. was passed which localised the position of the foreign body. Owing to difficulty of respiration the tube had to be quickly removed and artificial respiration resorted to, then tracheotomy after respiration had been established. The nut was withdrawn by a pair of forceps introduced through the tracheotomy wound.

M. D. EDER.

Appendicitis in children (*Prag. med. Wochens.*, February 18, 25, 1909).—**Springer** gives the results of nearly 100 cases treated during the last eight years at the Children's Hospital. His youngest case was aged 3 years; after five years the cases are as frequent as in the later years of life. Out of sixty-eight acute cases, fifty-two were boys, sixteen girls. The appendix is relatively longer in children than in adults, and usually lies with its free end in the small pelvis. Hence when no pain is felt at McBurney's point it may be obtained on pressure somewhat lower. Rectal examination is most important in children, and it should be borne in mind that it is very common to have some bladder symptoms in appendicitis among children. Apart from pain and dysuria in micturition in acute cases there is retention of urine in subacute cases, and this in some cases may lead one to regard the bladder as the affected organ. More commonly than in adults the attack begins acutely. A leucocyte count is of little use in practice, and the writer has quite given it up of late years without feeling the loss. The nature of the stools is not of the slightest importance; diarrhoea is not much less common than constipation. The differential diagnosis is easier than in adults since a number of diseases can be at once excluded, and among girls only a salpingitis comes into question; an examination of the vulva for discharge must never be omitted. Other acute abdominal diseases like intussusception and colic have to be considered; coxitis, spondylitis, and pneumonia must be excluded. The prognosis is the same as for adults—very favourable when the case is diagnosed early and treated promptly. Every case of acute disease when a diagnosis is established within forty-eight hours should be submitted to operation. Unfortunately many doctors temporise in these cases; to "wait with the knife in the hand" is a pretty phrase, but nothing more. The patient bears the risk. Out of thirteen cases treated within forty-eight hours of onset there was not one death. All cases of chronic appendicitis should be operated. Many an obscure and chronic case of colitis or secondary anæmia is of this nature. The diagnosis of chronic appendicitis is not difficult in children. Palpation is easy; the appendix is often palpable. These cases should not be treated symptomatically for years, but operated upon and cured forthwith.

M. D. EDER.